

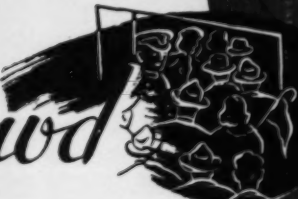
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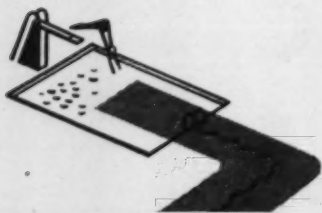
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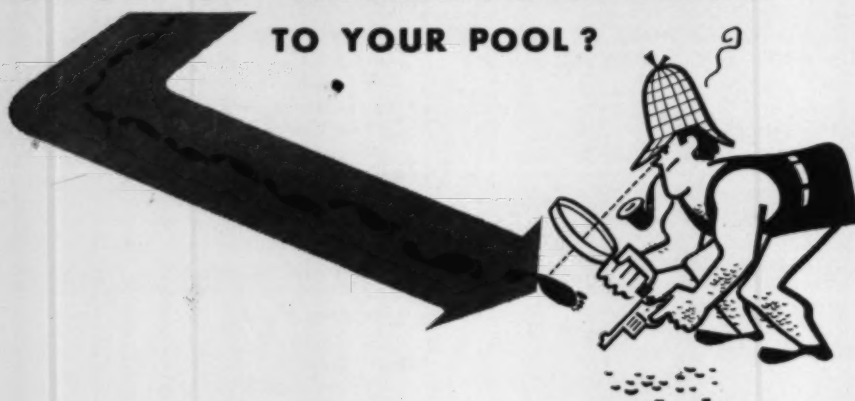
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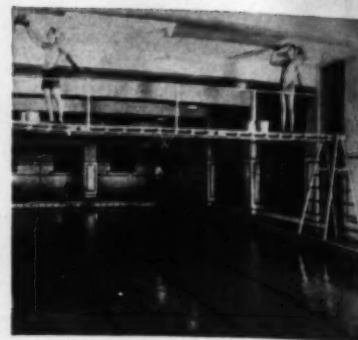
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### Convex Backboard

It is quite possible that the next revolutionary move in basketball will center around the shape of the backboard. Basketball men are beginning to realize that the old rectangular shaped bank has outlived its usefulness. Several weeks ago, the Fred Medart Mfg. Co. unveiled what may well be the banking device of the future. The new bank, which is still in its experimental stage, is convex in its face toward the playing floor with the ends curved four inches in from the center surface. This type of board presents interesting possibilities in the matter of corner shots. On courts which extend four feet behind the bank, a player may stand deep in the corner and shoot for the basket, an impossible try with the standard flat backboard. The convex bank was investigated thoroughly at the recent meeting of the National Basketball Committee.



### Safety Home Plate

The Seamless Rubber Co., after extensive experimentation, has produced a home plate which will eliminate the hazards involved in sliding. The new "Sav-A-Leg" plate has a beveled apron of black rubber sloping off from the sides of the white plate, which, when covered with dirt and set in the ground, does not show. When a player slides into the plate, his spikes will ride up on the apron and not catch abruptly as in the traditional straight edged type of plate. The plate is molded in one piece and the white cannot be separated from the black. It comes with the usual five spikes. The National League adopted the plate for official use this season.



### Pneumatic Dummy

Marty Gilman, the Thomas Edison of the football dummy business, has a new one on the market—the first inflated football dummy. Although it is a regular sized dummy, 40-in. high, 14-in. diameter top, and 18-in. base, Gilman's latest weighs only 12 pounds. It has sponge rubber handles on each side and can be deflated and carried on trips. It is especially useful in dummy scrimmage for shifting defenses and mauling trap plays. It absorbs shock in blocking, protecting both the defensive and offensive men, and can easily be moved about the field. The players may take it home for practice during the summer.



# SCHOLASTIC COACH

Reg. U. S. Pat. Off.

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# DEFENSIVE FUNDAMENTALS AND STUNTS

by Roy J. Wietz

Roy J. Wietz introduced himself to Scholastic Coach readers last September with an article entitled "Four Fundamental Line Blocks." At the time, he was coaching the line at Morrison R. Waite High School in Toledo, Ohio. He has since moved on to the University of Vermont, where he now coaches the varsity line. The author is an old hand at the business. After graduating from the University of Illinois, where he played guard on the Western Conference championship teams of 1927 and '28, he coached the line at Miami University (Ohio) for five years (1930-35) and then put in three more seasons at Waite.

**W**HILE tackling is the essence of defensive football, the lineman, to bring down the runner, must first reach him; and when opposed by good blockers, this is easier said than done. A good deal of time, therefore, must be spent in devising, practising and perfecting various individual stunts which will enable the defensive lineman to get into position to tackle.

The number and types of stunts depend upon several variable factors. For example, how many coaches are actually working with the squad? How much time do you have for the practice of fundamentals? What is the mental and physical development of the boys? How much emphasis do you place on defense?

I have always taught my linemen that it is much easier to stop an opponent before he gets to the line, or on the line, than to wait for him in the open. For this task, a few defensive tricks, skillfully executed, pay greater dividends than a more extensive variety only half learned. It goes without saying that a man with a large repertoire of well-learned stunts has a distinct advantage over the fellow who has not. But there are few high school boys who can assimilate a heterogeneous assortment of defensive tactics. Therefore, I teach all my boys certain standard and special fundamentals, adding new stunts only if the player has the ability to absorb them.

In general, all linemen are instilled with the idea of getting across the line of scrimmage, protecting their own territory while doing so and smashing to the core of the attack or ball-carrier. When they have accomplished all this, they must be in a position to tackle.

In laying the foundation for a defensive line, we start with stance. The basic position is of utmost importance and consequently considerable time is spent with the new boys. A sprinter, to assure a speedy get-

away, does not start from a standing position but rather from a crouch close to the ground. The same law of body mechanics is applied in defensive line play. Our linemen are taught two types of stances—three-point and four-point.

A four-point stance is employed by the guards and center, and sometimes the tackles, when they have been backed up to their own goal line. They assume a position with the feet parallel and shoulder-width apart, knees bent, rump low, back parallel to the ground or inclined slightly upward, head up, neck bulled, hands on ground shoulder-

The three-point stance has greater strength and flexibility than either the four-point or semi-crouch, and is particularly adaptable to the play of the center, guards and tackles. The boy lines up with his feet shoulder-width apart and one foot farther back than the other, the distance varying with the type of boy. As a rule, a tall man will have the rear foot farther back than will the short stocky type, although there is no set rule.

The weight is well distributed on the balls of both feet and the grounded hand. The knees are well bent with the rear member practically touching the ground at times.



Straight Arm Shiver

width apart, fist closed, weight of the body resting on the closed fingers and the thumbs extended. We like to compare the lineman with a kangaroo, who gets his drive from the rear legs.

The lineman may vary the four-point stance by lining up with one foot considerably back of the other. The rest of the body assumes practically the same relative positions. The feet are still shoulder-width apart and pointing straight ahead, with the weight distributed on the balls of the feet and the hands. The main drive is made from the front leg, but the rear foot comes forward with the first step. Both of these four-point stances have their advantages, but they are not perfect by any means. They have a tendency to cramp the lineman and to limit the use of his hands and range of vision.

The hips are fairly low, and, if possible, on a line over the rear knee. The back is parallel and straight, or inclined slightly upward. The head is up and watching the ball. The hand opposite the forward foot is on the ground, fist closed and thumb extended. The other hand may be carried at the side with the elbow slightly extended or held shoulder level, elbow bent, in a position to hit quickly with a powerful or sideward blow. From this position, the player can make the necessary adjustments for the type of stunt he intends to use. The three-point is a fairly relaxed stance and suitable on almost any part of the field.

The semi-crouched or two-point stance is quite adaptable to the play of the end or tackle when there is a possibility of a long gaining play. The feet are usually shoulder-width

apart or slightly under with the rear foot well behind the forward, as in a three-point stance. The knees are flexed, the body bent well forward at the hips and the back straight but inclined at a 45 degree angle. The head is up and the hands low, but far enough away from the body to ward off any potential blockers. From this stance, the player may move either foot forward as he deems advisable. The weight of the body may be evenly distributed on both feet or strong over one foot.

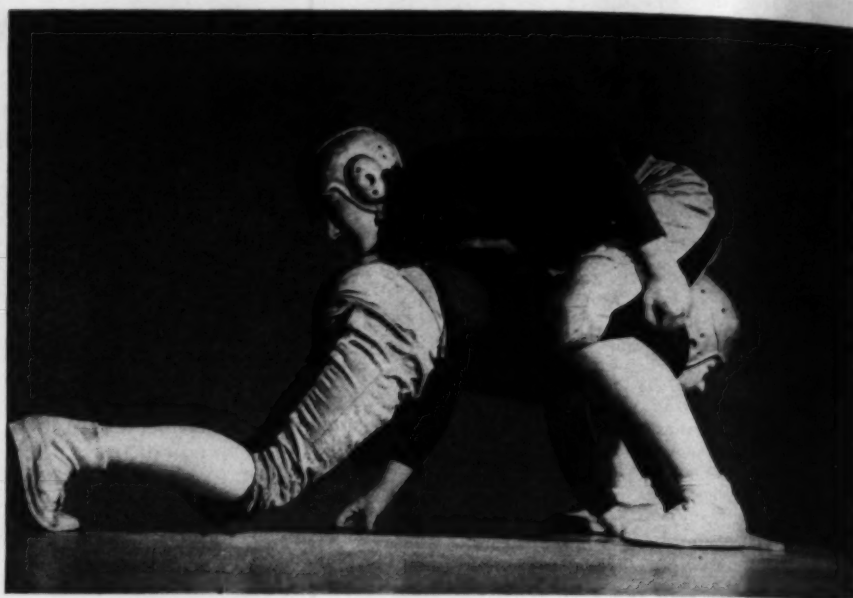
### Standard stunts

After absorbing the instruction on stance, the players are ready to be taught the individual stunts. They are first shown the four standard defensive stunts—the straight arm shiver, shoulder charge and straight arm, submarine and lift.

The **straight arm shiver** is the most practical of all and easy to learn. It is especially adaptable to short stocky linemen, and may be used from either a three- or four-point stance. The success of the maneuver depends on a quick charge and a good follow up of hands and legs.

The player strikes with the heels of the hand, fingers up, either on or near the point of the shoulder, or the junction of the neck and shoulder. The arms are straight both at the time of contact and after completion of the stunt. One or both knees may be touching the ground, but the feet, which are shoulder-width apart, are following up with short digging steps to develop power and maintain position. In this maneuver, the lineman should keep his body in as close to a straight line as possible.

The **shoulder charge and straight arm** requires fine timing and is used



Submarine

primarily when playing against two men. It can be used from a position in front of one man or directly in the seam between the two.

A step is taken with the forward or backward foot, as the case may be, but on the side to which the player intends to strike with his shoulder and arm. When the initial charge is made to the right, as in the accompanying illustration, the right foot is planted and the shoulder and elbow driven into the opponent's shoulder or side. In the next movement, the opposite foot is brought forward and the heel of the left hand (elbow locked) is whipped up into the junction of the other opponent's head and shoulders. On the third movement, the right shoulder and arm are released from their position. The right arm, with elbow locked, is whipped up and the heel of the

hand is driven into the opponent's hip bone. From then on, it is up to the defensive man to force his advantage by widening the gap and forcing the play.

We have found that a distinct advantage is gained by using the shoulder and elbow first and then using the hands; first, it tends to keep the lineman in a low crouched position; second, there is less likelihood of the opponent getting into the hip; and, third, with the arms in closer to the body, the player is more apt to move his feet quicker than if he depended on the arms for protection.

To our way of thinking, the **submarine** ranks first for consistency in effectiveness. It can be used by either a large, slow man or the quick agile type.

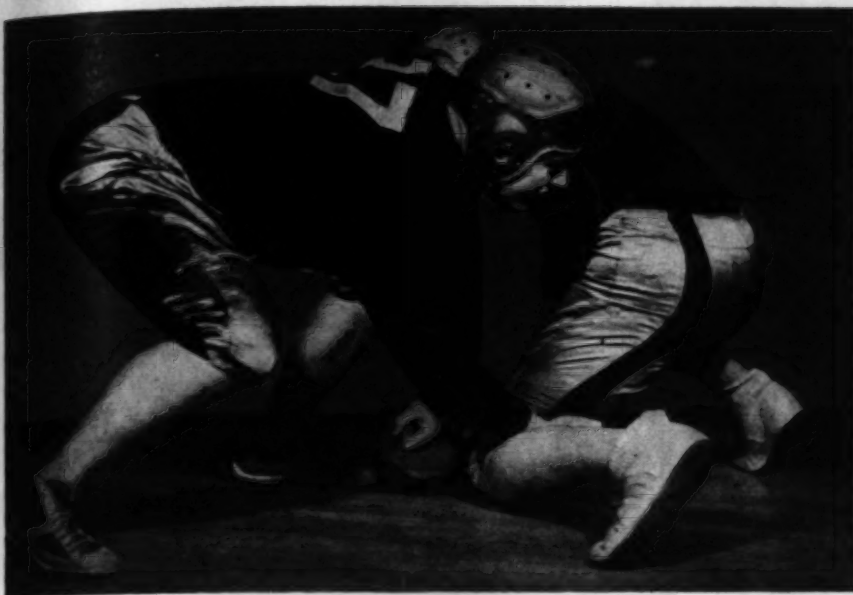
From either a three- or four-point stance, the lineman drives forward quickly and with as much power as he can muster. The head and shoulders move forward in a dipping fashion and are driven as far forward as possible through the opponent's legs or in the seam between two opponents. The hands are carried under the chest, the back level with the ground and the legs up under the hips or slightly behind, but at any rate moving forward with choppy steps.

When resistance is met, the player straightens his arms quickly, lifts his head and shoulders and by continual digging with his feet is able to clear himself. When working against opponents who play extremely low, it is sometimes valuable at the end of the maneuver to execute a handstand in order to completely throw them off-balance and at the same time come up in a tackling position.



Shoulder Charge and Straight Arm





Knee Clip

The **lift** is a difficult stunt for the offense to break up and is used on only one man. It is a very effective stunt when employed by a man of considerable strength, size and weight.

The player makes his charge from either a three-point or semi-crouch position with one or both arms hanging low, palms facing the opponent. As the man steps out with the rear leg, he swings his hands up quickly and powerfully with a scooping motion into the opponent's chest. If the blow is powerful and enough drive is generated with the feet, the opponent's charge will either be completely stopped or rendered ineffective enough to place the defensive man in a distinctly advantageous position to tackle.

### Special stunts

When the lineman has been thoroughly schooled in the standard stunts, several special defensive fundamentals may be added to his repertoire.

The **leap frog** is a good surprise stunt to pull against a low playing offensive lineman. From a three-point or semi-crouch position, the player throws his hands into the small of the opponent's back or buttocks, and with a good push-off straddle-vaults over the man. A good leap is often obtained which will permit the player to drive on at full speed to meet the play. This stunt is probably most effective when there is a possibility of a long gaining play such as a pass or kick. It should not be attempted too frequently.

The **knee clip** is most effectively used by a tackle playing to the outside of an unflanked end. From a

three-point or semi-crouch position, he drives the hand nearest the opponent into the latter's shoulder or to the junction of the neck and shoulder. The blow is administered downwards with a locked elbow (if possible). At the same time, the lineman strikes the opponent in the back of the knee joint with the side of the opposite hand, using a swinging side-ward and downward motion to do this. This causes a breakdown in his charge and gives the lineman an excellent opportunity to get into position for the play.

The **wedging-the-gap** stunt is effective against two men who have a gap between them, preferably a tackle against a wingback and an end. The charge is very much like that of the submarine. It must be low and directed between the two opponents. As the player charges, the

hands are thrown up and forward, elbows locked, in the shape of a wedge. When the elbows pass the shoulders of the opponents, they are jerked sideways to widen the gap. Continual hard driving with the feet and legs are necessary to force the defensive man through to a tackling position.

### General hints

1. Start with the ball, get across the line, not too deep or too shallow as to be completely out of the play.

2. Work toward the core of the attack.

3. Take the initiative and get the start on your opponent.

4. When in doubt as to your normal spacing, spread your arms and let your partner do the same. If the tackles are properly spaced, the three or two center men will be approximately correct.

5. Adjust your defensive tactics with consideration to the following: (a) position of the opponent on the field; (b) type of play, down and distance to go; (c) time left to play; (d) formation and position of best offensive player; (e) position of the rest of the defensive line. Watch the ball and get the jump.

6. Don't try to punish your opponent with your hands. The real object is to check his charge or to raise and lift him, or to divert his charge and make it ineffective.

7. Don't make your line play a wrestling match. Strike forward and to the ball.

8. Strike forward with the arms, elbows and shoulders, as the feet move forward.

9. If you get through without any resistance, keep low and watch for a mouse-trap.



Wedging the Gap

## A STUDY OF SPRINTING STRIDE

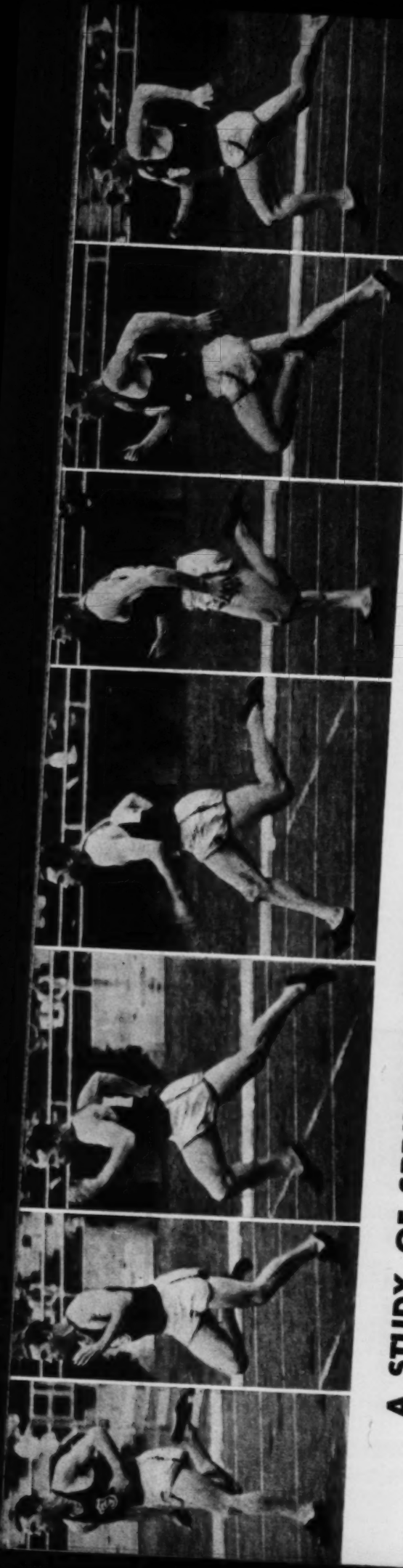
THE accompanying progressive action strips of Adrian Talley (above) and Erwin Miller (below), both of the University of Southern California, graphically illustrate the full-speed phase of the sprinting stride. The sprinters have attained their maximum acceleration and are now attempting to maintain it to the tape. From this point on there will be no further change in trunk lean and the strides will be of uniform length. Watching Talley in action, the observer is immediately impressed with his power and peculiar gait. He seems to run with a decided shoulder roll and an outward extension of the toes. This can clearly be discerned in the first, fourth and fifth pictures. In the first picture, note the oblique plane of the shoulders and how the toe of the left foot is pointed outward. When he lands on the opposite foot (fifth picture), he again points the landing toe outward. Toeing out is usually considered a fault since it causes a loss of power. Hence, most runners prefer to drive with the toes pointing straight ahead.

The two phases of the full-speed stride—the recovery and the drive—can be singled out by following the sprinter from the second through the sixth picture. In No. 2 the left leg is shown in its driving phase and the other member in its recovery phase. The right

knee is flexed so that when the leg is brought forward, the heel is carried high under the buttock. In the third and fourth pictures, Talley is in a double float with both feet off the ground. As the toe touches the ground, the driving force of the leg is applied at once. At this stage (sixth picture), the right foot propels the power forward by sweeping backward powerfully. The driving leg straightens out as the power moves forward. During this phase of the stride, the left arm is swung backward and the right arm forward to compensate for a natural tendency to twist to the right.

Miller's carriage is slightly more erect than Talley's but this is to be expected since Miller is running a 440. Although he runs with his chest out and chin in, Miller does not appear to be tied up in the shoulders. In fact, his shoulder girdle muscular fixation is probably less tense than Talley's, as it rightfully should be since he has to run almost four and a half times as far. Hence, under normal conditions, a 440-yard sprinter adopts a slower cadence, a lower arm carriage and a less vicious extension of the driving leg.

Miller's out-thrust chest is suggestive of the European style of distance running. The track men on the eastern side of the Atlantic believe that an elevated chest facilitates breathing and permits full striding with a minimum expenditure of energy. In Miller's form, note particularly the explosive power generated off the driving foot (second picture) and the excellent fashion in which he makes his landing (fourth picture).



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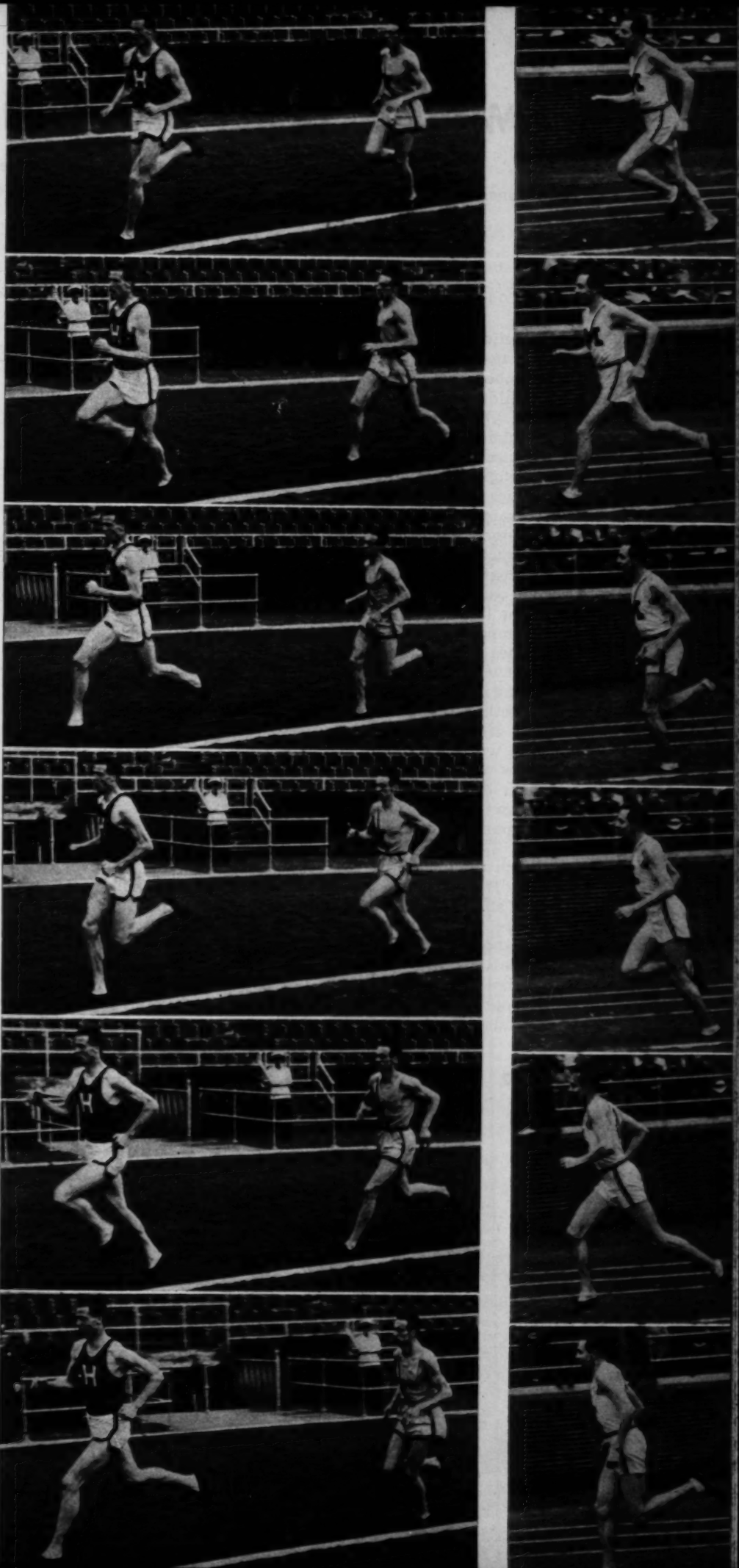


## Stride For Distance

TO ACHIEVE a full speed stride with a minimum output of energy, the distance runner must stress muscle relaxation, rhythm and breathing facility. A study of the accompanying progressive action strips will show how this may be accomplished. On the left, Alex Northrup of Harvard is shown leading Howie Borck of Manhattan in the 1938 I.C. 4-A mile race at Randall's Island (N. Y.). The two men have just killed off the rest of the field and are going into the last lap.

Both milers are thoroughly relaxed and running easily. From Northrup's clenched fists, it is apparent that he is making more use of his arms than Borck. The Manhattan runner's hands are cupped rather than clenched, promoting thorough relaxation of the forearms. The trunk angle in distance running is straighter than in the middle distances, and the foot touches the ground so that work is more evenly distributed among the muscles of the leg. While Northrup uses a standard ball-heel landing, Borck evidently favors a landing with the heel first (fifth picture). Some experts recommend this type of landing because it relieves the driving muscles from the landing jar. Borck won this race in 4 m. 13.9 s., a new I.C. 4-A record.

The runner on the right, Ralph Schwarzkopf of Michigan, is a picture runner. He is built like Northrup, tall and powerful, and is addicted to somewhat the same style of running. He is shown here during a late stage of the invitation 3000-meter run at the Penn Relays last year. Since he has to run almost twice as far as Borck and Northrup, Schwarzkopf emphasizes a slower cadence and a shorter stride. He is well relaxed in the shoulders and arms, and correctly breathing through both the nose and mouth. Note the fine angle of the trunk in the fourth picture. Normally the trunk angle in distance running is about 5 to 10 degrees, as compared to 15 degrees in middle distance running and 25 in sprinting. The action of the arms and the extension of the driving foot are also dependent on the length of the race. The longer the race the less vigorous are these movements. Schwarzkopf entered this race as an added starter and finished first, defeating Don Lash among others.



# INTRAMURAL TRACK AND FIELD PROGRAM

By Laurence Janssen

A comprehensive three-year plan administered during the regular physical education periods

Laurence Janssen, chairman of the department of physical education at the Sacramento, Calif., Senior High School, outlines the unique features of the track and field program he is administering to 1,400 boys.

**T**HE traditional disparity in the average school between the members actually participating in athletics and the student body as a whole was once so great, that for many years athletics and physical education were looked upon as separate phases of the school program. Athletics were limited to a few carefully trained students, and these alone received the benefits of this type of instruction. On the other hand, for the great rank and file of the high school body, physical education offered the less enjoyable exercises of the gymnasium, performed two or three times a week according to the requirements.

The trend today is to bring the two departments together. It is commonly realized that if athletics possess enjoyment and worthwhile values for the gifted few who participate on an interscholastic basis, then all students should have their chance to receive similar opportunities and benefits.

Our modern intramural program is dedicated to this purpose. This movement has affected the entire athletic structure. By promoting a wide variety of sports, it has greatly broadened not only its own program but the interscholastic program as well. The intramural movement has been instrumental in developing new

types of inter-school competition, such as Play Days and Sports Days. Probably its greatest educational contribution, however, has been the placing of value upon informal recreation as well as upon organized athletic competition.

According to Mitchell and Mason, the intramural program has followed three lines of procedure: that of featuring and popularizing many new sports; that of surrounding the more strenuous activities with training regulations and health safeguards; and that of offering skilled instruction to novices who would have been entirely neglected under the old system of athletic participation.

At Sacramento, the activities in the intramural program supplement the physical education work. The students are first given instruction on sports fundamentals in the gymnasium, after which they are offered the opportunity to experience the game in intramural competition. Nowhere is this coalescent set-up so forcefully illustrated as in the track and field program.

## Physical education set-up

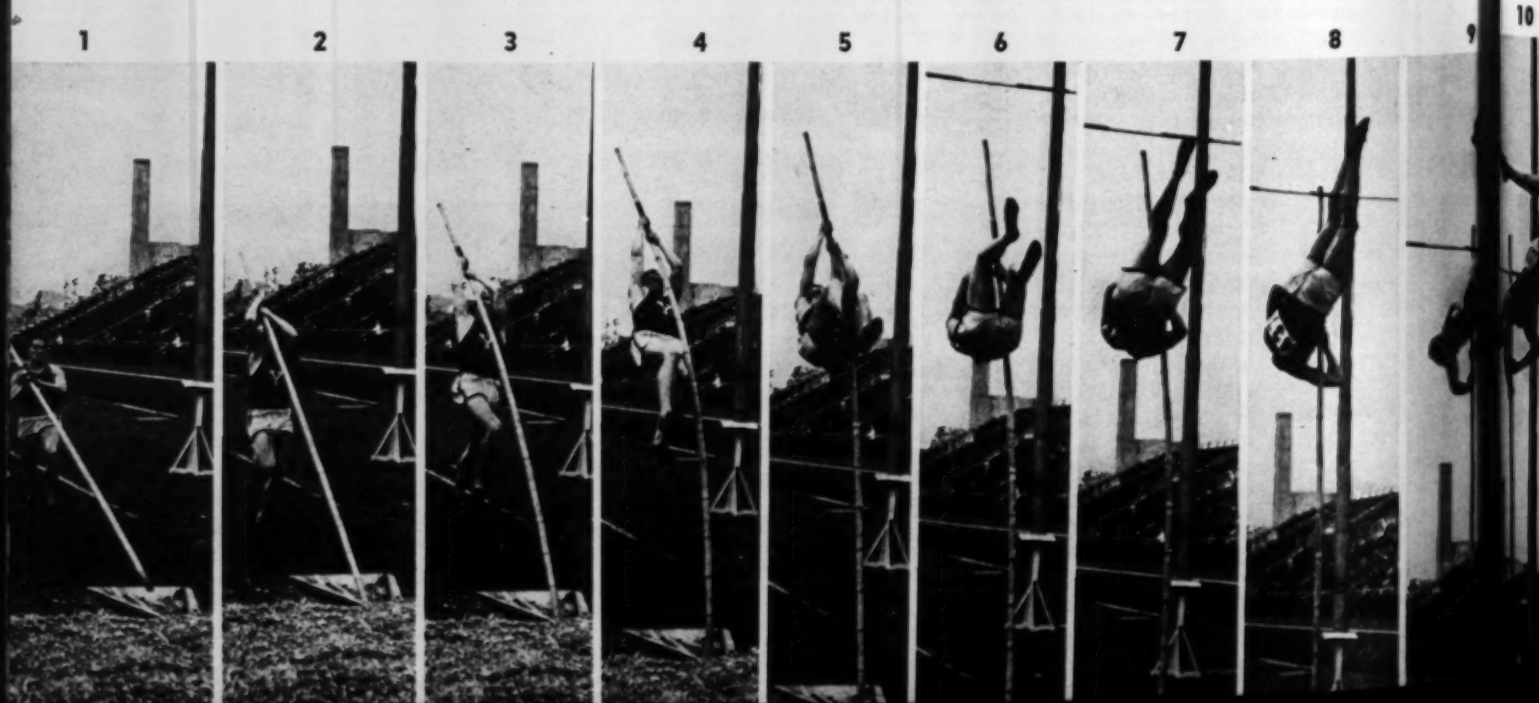
Before broaching this program, however, the writer believes it will help the reader to know something first about the physical education set-up. When a boy enrolls at Sacramento he is given a choice of taking physical education or R.O.T.C. The boys who choose physical education are immediately given a physical examination by the school physi-

cian and placed in one of the three levels of the program: active physical education, limited activity or rest.

The boys placed in active physical education are free to participate in any or all of the activities offered in the regular physical education program. Those in limited activity are confined to those activities recommended by the physician, and those assigned to rest groups are given complete rest under supervision of the school nurse for one hour each school day. About 88 percent qualify for regular activity, about 10 percent for the limited group and two percent for the rest group.

## Three levels

The program is based on a three-year plan of sophomore, junior and senior levels. The boys qualifying for regular activity are weighed, measured for height and checked for age, and then classified according to the California three-point classification system into eight groups—sophomore A, B and C; junior A, B and C; and senior A and B. The California three-point system classifies the boys according to their weight in pounds, height in half inches and age in months. For example, a boy 18 years of age, six feet tall and weighing 160 pounds will have a total of 520 exponents (age:  $18 \times 12 \text{ mos.} = 216$  exponents; height:  $72 \times 2 = 144$ ; weight:  $160 \times 1 = 160$ , for a grand total of 520). Boys having more than 459 exponents are classified as A's, those hav-





ing less than 460 but more than 429 as B's, and those having less than 430 as C's. The boys are re-classified at the beginning of each semester and must compete in the group in which the classification places them.

Each boy taking physical education has an individual steel locker in which he may store gym suits, shoes and other athletic equipment. Showers and towels are available after participation in an activity. The facilities for track and field are excellent. The school has a quarter-mile track and a field completely laid out with jumping and pole vaulting pits and standards, raised runways, shot put rings, hurdles, etc.

### Course on five events

During the first semester, the boys taking sophomore (first year) physical education are given a three weeks instructional course on five events: the 100-yard dash, a 60-yard race over four 30-inch hurdles, shot put, high jump, and broad jump. At the end of the instructional period, the entire group must take achievement tests in each of the five events.

The program for the upper sophomores is different. These boys are given a three weeks course on the following events: the 220- and 440-yard dashes, a 60-yard race and a 110-yard race over four 30-inch hurdles, the football throw for distance and the pole vault. Each boy is tested in the sprints, hurdles, and on either the pole vault or football throw, the boy having an option for the fifth event.

By the end of the first year, the boys have experienced sprinting, middle distance running, broad jumping, high jumping, low hurdling, pole vaulting, shot putting and throwing the football. An additional

three weeks of instruction in track and field is given during each semester in the junior year. All the events taken up in the first year are reviewed and distance running added to the schedule. Each boy then chooses five events in which he wishes to be tested. The number of points the boy scores in these events determines his grade in track and field.

A comparatively small percentage of boys compete in intramural track during the senior level. We have found that by this time the unusually gifted trackmen have gone out for varsity track and that the less talented boys have drifted into such spring interschool sports as baseball, for which 125 boys report annually, swimming and life saving (60), golf (15), tennis (25), crew (25), and spring football (40). About half of the total number of boys on these varsity teams are seniors. This makes it possible to give individual attention to each senior registering for intramural track. On this level, the boy is given more advanced work than in his junior year and particular emphasis is placed on conditioning.

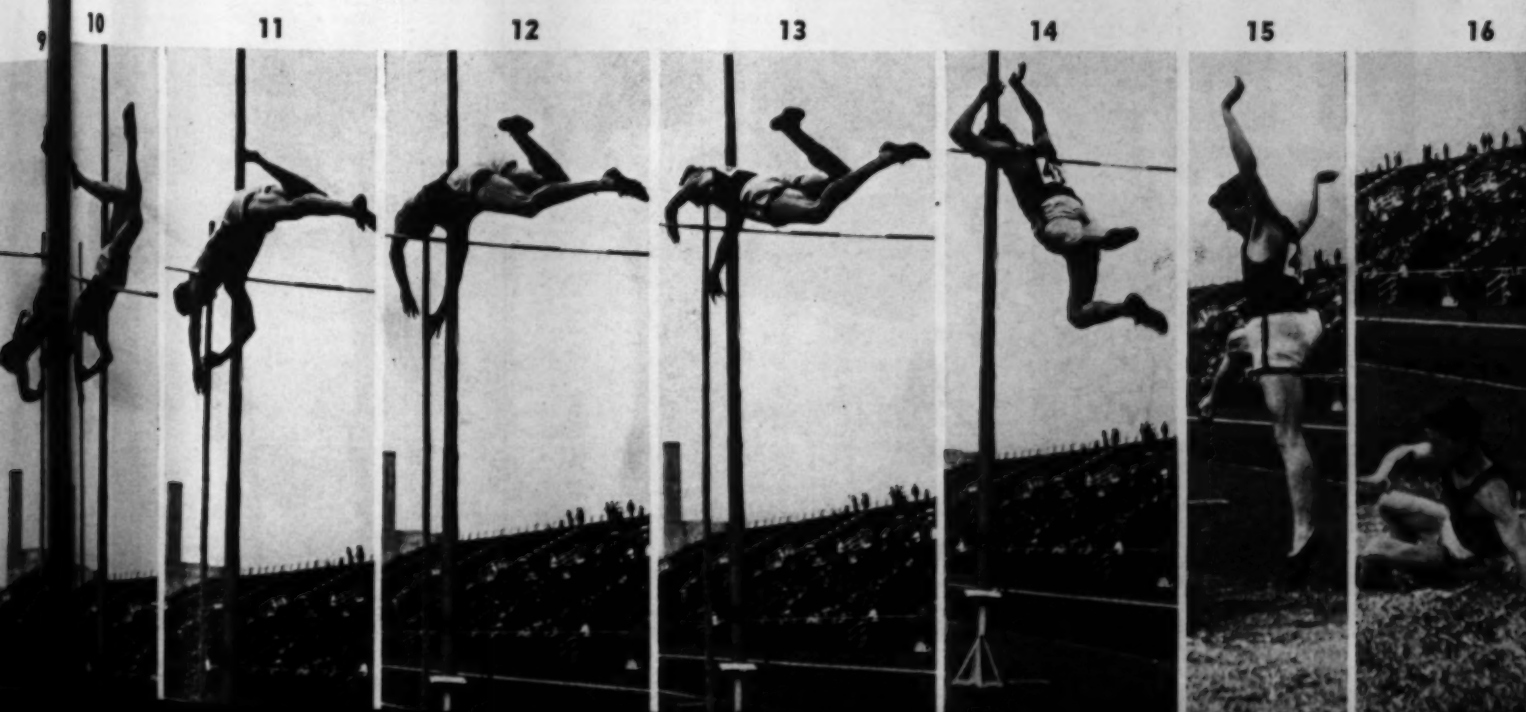
At the conclusion of the program in the senior year, each boy in the

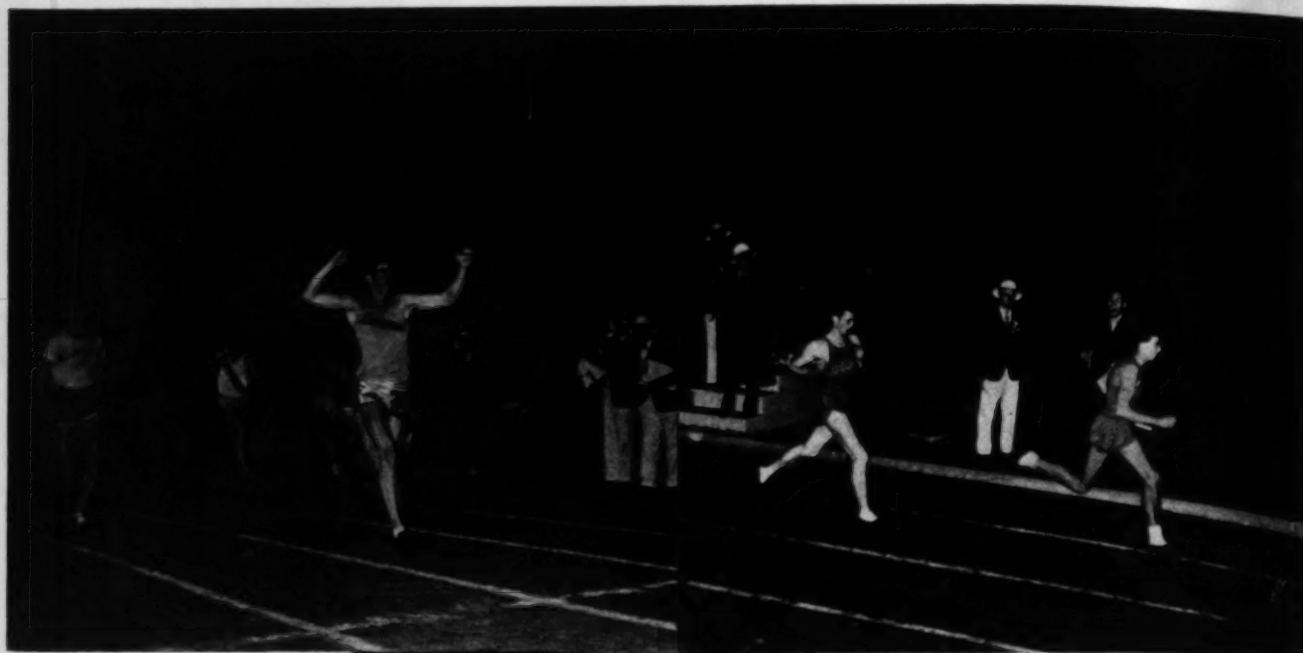
regular physical education classes has had instruction, has had opportunity for participation and has been tested in every type of event. Our system of achievement scales developed for evaluating the work of the individual student is based on the presumption that the maximum, mean and minimum achievements of a group of sophomore boys are usually lower than that of a corresponding number of junior boys of the same athletic classification.

The reader at this point may be puzzled by the exact connection between the physical education program and the intramural program. At Sacramento, we contend that intramurals do not necessarily have to be conducted after school or outside the physical education class period. As long as they provide an opportunity for mass participation, they are serving their full function.

We feel that no activity in which the students participate should be considered extra-curricular. Hence, we give instruction in the physical education period and encourage further preparatory participation after school (optional). The testing is done during the regular gym periods. The outstanding achievements are posted on the bulletin board.

**STRATOSPHERE INVASION:** The pictures below reveal the efficiency of Bill Harding's form. The Yale athlete blends at least five different movements into one coordinated whole. After obtaining optimum speed, he plants the pole (No. 2) and goes right into the swing up. Since he is a right-handed vaulter, he takes off from his left foot. During the ascension, the arms are fully extended and the body close to the pole. As the pole approaches a perpendicular position in No. 8, Harding starts his pull up with a strong flexion of the arms. The forward and upward momentum of the legs are still operating, but since he must face the runway in order to get the most out of his pull up, it is necessary for him to execute a half turn. He accomplishes the twist and pull up simultaneously (Nos. 8-10) by permitting the right leg to swing unchecked until the foot is well above the crossbar (No. 9). At this instant, the left leg is kicked vigorously upward and outward. This turns Harding around into a handstand position facing the runway (No. 10). At this stage, the pole is in a vertical position and the vaulter is ready for the flyaway. He executes a vigorous and simultaneous extension of both arms, which elevates the hips still farther over the bar (No. 11). This is the highest point of the lift and the legs are already beginning to drop. From this position, Harding performs his throwaway. This consists of a release of the pole by a slight flip of the hands away from the pit. Thoroughly relaxed, he then drops into the pit.





## Action

fast and furious, is the thing that keeps the large crowds coming back every year to see the Beloit Relay Carnival, the Midwest's only night intercollegiate track meet. A time schedule covering two and a half hours keeps every runner busy from 7:45 P. M. to 10:15. The pictures above and below show what the meet looks like without a background of blue skies and sunlight. The picture directly above shows Eldon Lindstrom of Whittier College breaking the tape after clipping off a very respectable 9.6s. for the 100-yd. dash. The runner directly below is Chuck Fenske of Wisconsin, who ran a special 1000-yard race in 2m. 10.2s.



## Color

is provided by fireworks, pagentry, and the array of pulchritude on the left. The girl in the center (in white) is the carnival queen, selected by popular vote at Beloit College. Her attendants represent the various sororities. The principal function of this court is to preside over the victory ceremony following each event. The athletes gather around the "throne room" and amid much pomp and circumstance receive their awards from the queen. (No wonder the boys are turning in such excellent performances.) The officials also do their bit to brighten up the carnival by wearing white helmets.





# A RELAY CARNIVAL UNDER THE LIGHTS

By L. A. Means

**Beloit's nocturnal track rendezvous for the smaller colleges attracts capacity crowds**

Although it is strictly a small college affair, the Beloit (Wis.) night intercollegiate relay carnival is one of the fastest growing track meets in the country. The story of its growth since 1937 comes from L. A. Means, who, as athletic director at Beloit College, also serves as director of the carnival.

**T**HREE years ago, the first annual Beloit Relays attracted 11 colleges and 120 athletes. In 1938, seventeen colleges and five high schools unfurled their banners and sent 200 competitors into action. The growing popularity of this event was even more marked this year. For the third annual carnival, twenty-nine colleges and six high schools brought 400 athletes to Beloit to compete under the lights. The 1940 meet is already an assured success. Every 1939 participant has signified its intention of returning next year, and seven other colleges from Ohio, Colorado, Indiana, Pennsylvania, California, and Illinois have already decided to send teams to the 1940 carnival.

The tremendous growth of the Beloit Relays may be attributed to several factors. For one, it is the only carnival in the United States which offers the smaller colleges such a splendid opportunity to compete on a large scale against colleges in their own class. The great relay meets at Drake, Texas, Pennsylvania, and Kansas serve more as the rendezvous for the nation's track greats. In each of these meets, the smaller schools must compete against colleges and universities many times their size, and, as a result, do not stand a chance in most of the events.

Beloit is strictly a small college carnival. The strength of the competing teams is usually nicely distributed and the races unusually close. To insure a square deal for all concerned, only colleges willing to observe the three-year rule for this meet are permitted to enter.

Another important factor influencing the growth of the meet is the fact that it is always held at night under the floodlights. Besides offering the students the unaccustomed novelty of watching athletics under the stars, nocturnal events also permit the working man to enjoy them. Practically every night venture into athletics has proven successful, baseball and football being shining examples. There is no reason why track, too, cannot flourish as a spectator sport under the lights.

At Beloit, a city that had never

before had more than 300 out to any kind of track meet, some 2,000 spectators turned up to see the carnival the first year. Last year 3,000 saw the meet, and this year a capacity crowd of 4,000 attended, the major part of the concrete stadium being sold out long in advance. Our future problem will be how to handle the fast growing track public. The West Coast Relays at Fresno State, the only other intercollegiate night carnival, also reports record-breaking crowds.

If the performances at Beloit may be taken as an index, athletes also seem to thrive on night competition. This year one of the fastest sprint records hung up anywhere in the United States was made by Eldon Lindstrom of Whittier College, Calif., when he twice sped over the 100 yards in 9.6s. Ralph Halla of Yankton College, S. D., clipped off a mile in 4m. 23s., and Chuck Fenske of Wisconsin, in a special 1000-yard attempt to break the existing world's record at that distance, missed it by only .5s., the watches catching him in 2m. 10.2s. Coe College's 440-yard relay team set a mark of 42.7s. which has stood for two years, as has Grinnell's record of 47.5s. in the 360-yard shuttle hurdle relay.

## **Floodlighting layout**

The first year at Beloit, people attended out of curiosity. The past two years they have returned with friends, and the area from which spectators come is widening rapidly. Only one thing will keep people coming back to see track meets in such numbers, and that is plenty of action. The spectators are also treated with lots of fireworks, nicely arranged pageantry and plenty of bands and music.

It doesn't take very much effort of an unusual nature to conduct a night track meet. The Beloit College stadium is equipped with little more than the average illumination.

On one side of the field behind bleachers which extend eight rows high, there are four steel poles 60 ft. high rising from the ground level. On the other side of the field on top of the 60-ft. concrete stadium wall, there are four more steel poles 30 ft. high, making a total height of 90 ft. These eight poles have six floodlights each with a total wattage of 72,000 watts. An additional 18,000 watts are used for ramps, parking, etc. Al-

though one set of poles is about 55 ft. from the sideline and the other 110 ft. away, the disparity seems to work out satisfactorily. There are no poles to obstruct the vision of the spectators and the plant, operating at 10 percent over-voltage, provides plenty of light. Incidentally, a few special lights are added to enhance the pageantry and to aid the jumpers.

Everything possible is done to insure top-flight competition. The track is arranged in seven lanes with staggered starts for every relay. For the field events, there are plenty of markers to indicate the best distances and separate pits which permit the events to be run off simultaneously and quickly.

Nine relays, each in two sections, plus three special track events, keep all runners busy in a time schedule covering two hours and twenty minutes. The schedule is carefully arranged so that there are no dull stretches for the spectators. Victory ceremonies take up the slack between heats and sections of the track events. Even the officials lend color to the occasion by being equipped with unique outfits. This year the 55 officials at Beloit did their share to brighten up the carnival by showing up for their chores in tropical helmets, black coats and white trousers.

The ceremonies started promptly at 7:30 with a welcome over the public address system by the carnival queen, selected by popular vote of Beloit students. After her speech, the queen, accompanied by six attendants, took her place on the throne, an artistically decorated platform with five steps leading to the throne proper. From this platform, the queen attended the business of medal distribution.

High schools in Wisconsin are also finding out that night track is a paying proposition. At Wisconsin Rapids during the past seven years, the fine indoor meet has grown rapidly under the energetic leadership of Principal Ritchie and Coach Carl Klandrud. The Wisconsin Fox Valley night carnivals for high schools have been running for six years, and always attract large crowds. Pat Dawson at Janesville started his Rock Valley carnival two years ago, and it is growing fast. Other night high school meets are being successfully held at Madison, Wis., Maywood, Ill., and at the Kemper Military Academy in Missouri.

# FROM OIL SIGNS TO FIELD MARKERS

By Frank Colucci

Frank Colucci, physical education director at the McKinley Junior High and Elementary School in Flint, Mich., is blessed with an inventive bend of mind which manifests itself in various ways. Prior to his solution of the field marker problem, he invented a game called shuffle hockey which was published in *Scholastic Coach* last February.

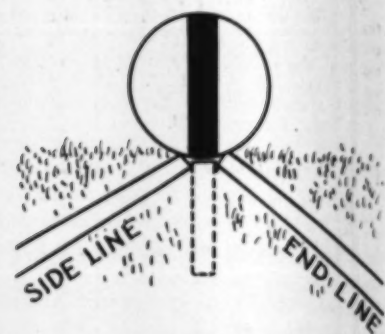
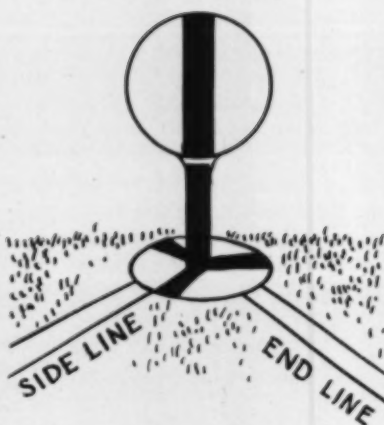
**W**HILE facilities condition what one can accomplish in a physical education program, the progressive administrator is not daunted by a limitation of play areas or equipment. In effect, limited facilities offer nothing more than a challenge. They are obstacles in the way to the realization of the general objectives of the program.

These obstacles impose a severe hardship on the man who is responsible for the administration of the program. Where play area is restricted, for example, it becomes an arduous task to work out a full program of activities. Yet, rather than prune the program, many high school and college physical educators are conducting as many as four activities on a playing field normally used for only one.

The difficulties in administering such a program are numerous. For one, it becomes a problem to keep each of the fields properly marked and set off from the others, especially in elementary schools where student help is not always available. And yet if this is not done, the activities will tend to overlap each other, cause confusion among the players and in general work against the best interests of the program.

## Revamped signs safe

With these thoughts in mind, the writer devised a series of field markers which should solve the problem satisfactorily. The markers are nothing but revamped gasoline signs, originally used by the big companies to advertise their brand of gasoline or oil. They can easily be placed on the playing field without endangering the safety of the players. Where play area is limited and



Figs. 1 and 2

it is necessary to create a few extra playing fields, the signs will make a good saving in time, money and energy.

Since these signs come in different sizes and shapes, it is advisable to use a standard size sign in order to lend balance and a decorative touch to the play area. **Figs. 1 and 2** show how the signs may serve as field markers. The first illustration shows the completely assembled sign with a paint job concealing the blurb. The second illustration



Fig. 4



Fig. 3

tion shows the sign and post part after the base has been unscrewed. The post part is inserted into the ground with only the face showing above the soil. This is the more practical marker of the two because it cannot be removed from the field by souvenir hunters.

The sign is painted a bright color (on both sides), preferably orange or yellow, with a dark stripe running down the center. This stripe should be at least three inches wide and of a dark color. A yellow background and black stripe or an orange background and black stripe are good color combinations for all-weather use.

When the signs are placed at the corners of the field, the center stripe acts as a determining agent and always faces the opposite corner of the field. If the signs are used at the center of the field, the stripe should face the opposite side of the play area.

These markers do away with the necessity of lines. However, they should not be used on football grid-irons unless the boys play the touch tackle game.

For field hockey, speedball and soccer, several light furrows may be made in the ground for goal tender and penalty areas. A home-made tool may easily be constructed for the job (**Fig. 3**). Once the ridges are scraped along the ground, it is a simple matter to keep the furrows sharply defined.

**Fig. 4** shows how the signs may play an important role for advertising purposes, especially in front of the building and in the halls. When used as an advertising medium, the signs may be painted with many attractive colors.

**Fig. 4** may also be pressed into service as a marker for distance throws with a soccer, basketball, baseball or softball (**Fig. 5**). The oil signs may be used very handily to control the crowds at various indoor and outdoor activities.



Fig. 5



# FOOTBALL PRACTICE FIELD EQUIPMENT

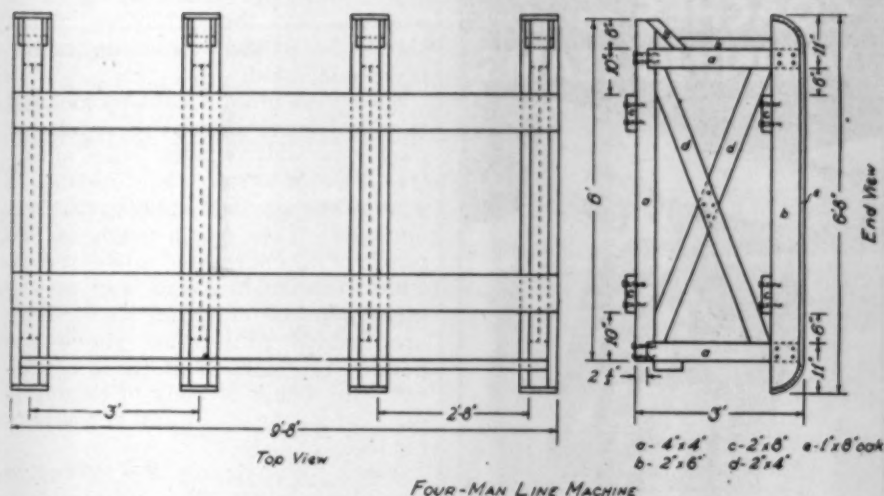
By Bernard F. Oakes

This article appeared originally in the September, 1935, issue of *Scholastic Coach*, and is reprinted in response to numerous requests. The writer, Bernard F. Oakes, is head coach at the University of Oklahoma and author of "Football Line Play."

**P**RACTICE field equipment can be used to good advantage in teaching football fundamentals. After explanation and demonstration of fundamentals by the coach, players can practice for form at full speed against charging sleds and blocking dummies.

The charging sled is of great help in developing the shoulder charge. Players should line up the same distance from the sled as they would from their opponents in scrimmage. In using a sled with seven posts all the linemen from end to end can take their places, or seven candidates for one position may practice the charge together. (See page 16 for drawing.)

I prefer having a complete line practice against the sled as a group. The centers can then be working with their linemen and also getting practice in passing the ball with their charge. It should be emphasized that the players make quick and hard



**FOUR-MAN LINE MACHINE:** In the diagram showing the end view (right), the 6 ft. 8 in. keel-shaped board forms the bottom of the sled and the upper left-hand corner the contacting surface.

contact with the padded posts and not be allowed to run on their hands in following up the charge unless it is absolutely necessary to do so. Short digging steps should be demanded.

Charging the sled a distance of eight or ten feet is sufficient, and after a series of three charges using one shoulder, a rest period should be

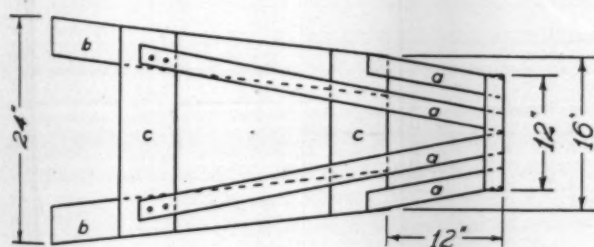
given while another line of candidates is put through the practice. The next time the opposite shoulder is used.

If there are any faults in charging they will show up in practice on the charging sled. All the points, such as having the hips low, the feet well spread and the back straight and the elbows extended, must be observed by the coach and corrections made where needed.

The charging sleds may also be used for practicing the straight-arm shiver. The padded ends represent the shoulders of an opponent immediately in front of each player. For the starting signal a ball is held on the ground by the coach or a player seated midway along the sled, and snapped as it would be by an offense.

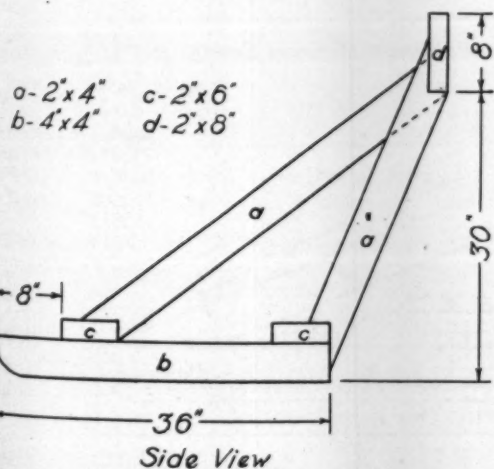
The players, to get a fast start, should be instructed to charge with the ball as it is moved. This charge should be continued three or four yards, the players driving the sled ahead of them and maintaining a correct position. This practice develops the players so that they can shift their feet, use them forcefully, and maintain this position on their opponents.

The seven-man charging sled should have the uprights, overhanging parts of the top timbers, and defensive board padded with heavy canvas which is tightly stuffed with upholsterer's hair. An 18-ounce double filled canvas should be used, as it will then not have to be replaced each year. Upholsterer's hair makes the best filler as it is springy and gives good protection. It also will not

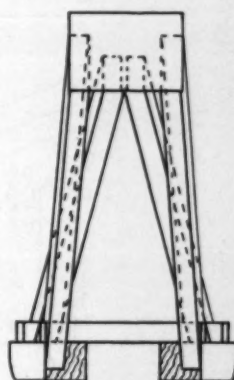


Top View

"A pair of end sleds should be on every practice field," advises Coach Oakes. The 12-by-8-in. rectangular shaped plank on the uppermost part of the sled is heavily padded and forms a bumper which the defensive end is supposed to strike with both hands.



Side View



Front View

END SLED

## 2 STEPS to help BASKETBALL COACHES develop WINNING TEAMS



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absorb moisture, which would be a factor in rotting the canvas.

Some coaches prefer a four-man line charging sled. The accompanying drawing of this type of sled is suitable for both offensive and defensive work. The uprights for offensive practice and the defensive board should be padded the same as the seven-man sled.

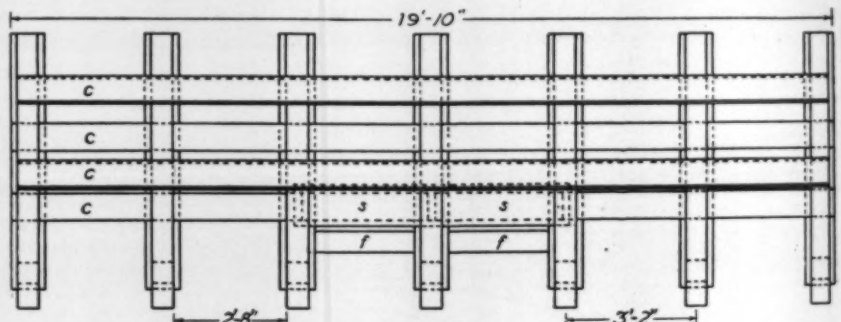
Close line play in modern football is a battle of lifts. The defensive players as well as those on the offensive attempt to raise their opponents as they charge. Being able to raise an opponent takes away much of the power of his charge and makes it possible to move him one way or the other. On the charging sleds there are padded projections above the padded posts. Each of these represents the trunk or body of an opponent, while the lower post represents his legs.

When practicing the offensive shoulder charge, the players are given the command "up" after four or five steps, and they then drop their hips as low as possible, drive upward with their shoulders and lift the front of the sled. In practicing the defensive straight-arm shiver against the defensive board, the players start their hands from a low position.

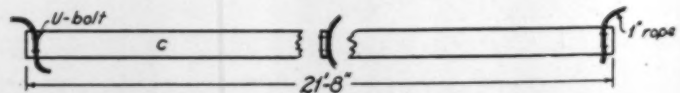
A pair of end sleds should be on every practice field. The ends, and also the tackles, can get a great deal of valuable practice by working on these sleds a few minutes each day. One of the most difficult assignments in end play is to rush across the line of scrimmage, advance just so far, stop, play the interference and stay in balance. These sleds should be placed about three yards back of an imaginary line of scrimmage with the bumpers pointing at an angle toward the defense. The defensive ends take their positions on the line of scrimmage and a little to the outside.

Ends should be instructed to stay low and throw their feet and legs backward as they strike the sled with both hands. In the course of their practice they should execute pivots to release themselves from imaginary blocks, do some drifting after striking the sled, and go through the entire repertoire of stunts demanded of an end.

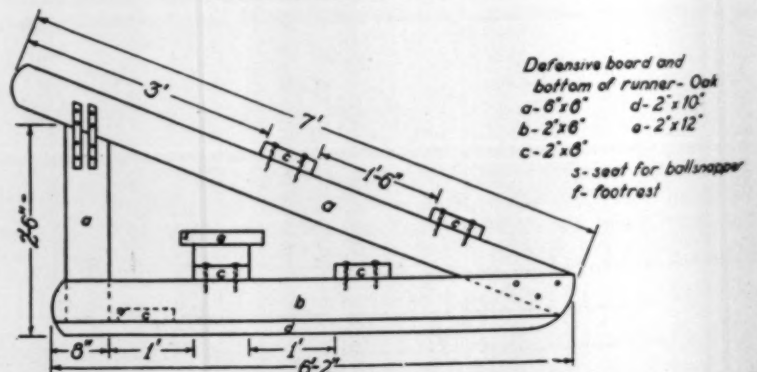
For open and downfield blocking practice, a dummy like the Gilman Comeback Dummy is a great help. It falls down when struck, then erects itself. An entire defensive team made up of these dummies can be used to good advantage in developing timing of plays and running of signals.



Top View



Removable Defensive Board



End View

LINE CHARGING SLED



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Dear Reader:

We hope you have enjoyed SCHOLASTIC COACH and that it has been an aid to you in your work. To help us in our work of bringing out this magazine for the coming year, may we ask a special favor of you. Will you take five minutes of your time to answer the questions outlined below.

After you answer the questions, we have made it simple and convenient for you to return them to us. Just follow the directions repeated in the four corners of this page—no envelope required, no addressing to do, no postage to pay.

Thank you very much.

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PUBLISHER

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CANDY STORES: A. _____	_____
B. _____	_____
STATIONERY STORE: 1. _____	_____
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Would you be interested in receiving posters and other material on prevention of colds?

☐ YES

☐ NO

Would you like to see more frequent editorial material on foods and training table menus in Scholastic Coach?

☐ YES

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## Coaching School Directory

**AMERICAN FOOTBALL INSTITUTE**—Flushing, N. Y. Two sessions: June 19-23 and June 26-30. John Da Grosa, director. See advertisement in May issue.

**BOSTON COLLEGE**—Boston, Mass. June 26-July 1. John P. Curley, director. See advertisement on page 35.

**BUTLER UNIVERSITY**—Indianapolis, Ind. Aug. 7-12. Paul D. Hinkle, director. See advertisement in May issue.

**COLORADO STATE COLLEGE**—Fort Collins, Colo. Aug. 14-18. H. W. Hughes, director.

**DAYTONA BEACH**—Daytona Beach, Fla. Aug. 21-26. G. R. Trogdon, director. See advertisement in May issue.

**DUKE UNIVERSITY**—Durham, N. C. July 21-29. Wallace Wade, director. See advertisement on this page.

**DULUTH STATE TEACHERS COLLEGE**—Duluth, Minn. Aug. 14-19. Lloyd Peterson. See advertisement on page 34.

**INDIANA BASKETBALL SCHOOL**—Logansport, Ind. Aug. 14-18. Cliff Wells, director. See advertisement in May issue.

**INDIANA UNIVERSITY**—Bloomington, Ind. July 31-Aug. 4. Z. G. Clevenger, director.

**JOHNSTOWN COACHING SCHOOL**—Johnstown, Pa. July 24-29. Albert Rubis, director. See advertisement in May issue.

**KANSAS COACHING SCHOOL**—Topeka, Kan. Aug. 21-26. E. A. Thomas, director.

**LONG ISLAND UNIVERSITY**—Brooklyn, New York City (N. Y.). Aug. 21-28. Clair F. Bee, director. See advertisement on page 39.

**MONTANA STATE UNIVERSITY**—Missoula, Mont. July 5-19. Douglas A. Fessenden, director.

**MORNINGSIDE COLLEGE**—Spirit Lake, Iowa. Aug. 14-19. J. M. Saunderson, director.

**NAMPA COACHING SCHOOL**—Nampa, Ida. Aug. 21-25. Harold A. White, director.

**NEW YORK HERALD TRIBUNE**—Flushing, N. Y. Aug. 29-Sept. 2. Stanley Woodward, director.

**NEW YORK STATE COACHES ASSN.**—Hamilton, N. Y. June 26-July 1. William T. Graf, director.

**NORTHWESTERN UNIVERSITY**—Evanston, Ill. Aug. 14-26. K. L. Wilson, director. See advertisement on page 36.

**PENN STATE COLLEGE**—State College, Pa. Main Session, July 3-Aug. 11; Inter-Session, June 13-30; Post-Session, Aug. 14-Sept. 1. See advertisement in May issue.

**SANTA ROSA COACHING SCHOOL**—Santa Rosa, California. June 1-3. Stanley B. Cropley, director.

**TEXAS H. S. FOOTBALL COACHES ASSN.**—Houston, Tex. Aug. 7-12. W. B. Chapman, director.

**UNIVERSITY OF COLORADO**—Boulder City, Colo. June 16-July 22. Dean Harold Benjamin, director.

**UNIVERSITY OF ILLINOIS**—Urbana, Ill. Dr. S. C. Staley, director.

**UNIVERSITY OF KENTUCKY**—Lexington, Ky. Aug. 7-12. M. E. Potter, director.

**UNIVERSITY OF NORTH CAROLINA**—Chapel Hill, N. C. Aug. 21-Sept. 2. R. A. Fetzer, director. See advertisement on page 34.

**WEST VIRGINIA UNIVERSITY**—Morgantown, W. Va. Aug. 7-12. Alden W. Thompson, director. See advertisement in May issue.



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# Summer Reading

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## HOCKEY

By L. H. Shoveller  
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British internationalists describe field hockey for men and for women. Technique and tactics are discussed and illustrated.

## TRACK and FIELD ATHLETICS

By D. A. G. Lowe

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Sound principles and methods, copiously illustrated with excellent photographs, make this book one of the most valuable guides to winning line play ever published. \$3.00

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## THE CONTROL OF FOOTBALL INJURIES by Mal Stevens, M.D. and W. M. Phelps, M.D.

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## SPORTS FOR RECREATION edited by E. D. Mitchell

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## TRACK ATHLETICS AND CROSS COUNTRY by Lloyd W. Olds

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## BASKETBALL FOR COACHES AND PLAYERS by George F. Veenker

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## THE BOOK OF MAJOR SPORTS edited by W. L. Hughes

In one volume the four major sports are fully described and illustrated. TRACK by Ray Conger, FOOTBALL by Glenn Killinger, BASEBALL by Dan Jessee, and BASKETBALL by "Stretch" Murphy. Should be in every coach's library. \$3.00

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# WRESTLING EQUIPMENT AND FACILITIES

By Finn B. Eriksen

High school athletic directors who are contemplating the installation of a wrestling program and desire information on equipment and facilities will find Finn B. Eriksen's suggestions particularly useful. The author, a former mid-western A.A.U. champion, was president of the Iowa High School Coaches Assn. for two years, and now coaches wrestling at West Waterloo, Iowa, High School.

**M**ANY boys of high school age who cannot play football, basketball or other vigorous team games because they cannot meet the physical requirements, may find an outlet in wrestling. No matter how light or heavy the boy is, or what type physique he has, there is always a place for him on the wrestling mat.

The physical benefits derived from the sport are numerous. Ten minutes of wrestling is probably more beneficial than an hour of monotonous arm and leg exercises. Every muscle of the body is exercised and no one group of muscles is built up to the exclusion or detriment of any other. This development is achieved in a relatively short period of time.

## Initial cost low

The competitive set-up is another bright aspect of the sport. Wrestling does not pit the big fellow against the small. Competition is arranged by weight divisions and the adversaries are boys of similar physical endowments. Only in rare instances does an instructor have to manipulate the draw in a tournament. For these reasons, wrestling lends itself to intramural as well as interscholastic competition, and may thus contribute doubly to the sports program of the junior or senior high school.

Both the outlay and the upkeep of the sport are attractively low. Very little equipment is needed to start a program. Any large, light, easily heated and well-ventilated room conveniently located in the school will be suitable. It is essential for the room to be well ventilated, and mechanical fans for this purpose are very effective.

## The mat

The basic equipment necessary for the practice session is a mat. If possible, the mat or mats should be large enough to accommodate the entire squad. The regulation sized

mat for college competition, as specified in the Intercollegiate Wrestling Guide,\* is 24-foot square, although sometimes a 22-foot mat is used. In high school, the size of the mat varies from 16- to 20-foot square, although the 20-foot mat is to be preferred.

The interior of the mat is generally made up of hair or felt, at least two inches thick. The sponge rubber mats now on the market are not used by many schools because they cost too much. In some schools where little funds are available, several of the regular gymnasium mats may be fastened together by sewing a strong canvas band, perforated with grommets, along the edge of each mat and lacing them together with a rope. Thus, it is no longer necessary to do without a big wrestling mat because of a lack of space, funds or inadequate storing facilities. Neither need the physical handling of a mat, weighing many hundreds of pounds, be an embarrassing factor. Mat trucks with rubber tire wheels are now available for storing and moving mats. However, where funds and facilities are available, a large one-piece mat is most desirable. Smaller mats may be placed around the edges of the large wrestling mat to protect the wrestler from falling on the hard floor and to prevent injuries to elbows and knees.

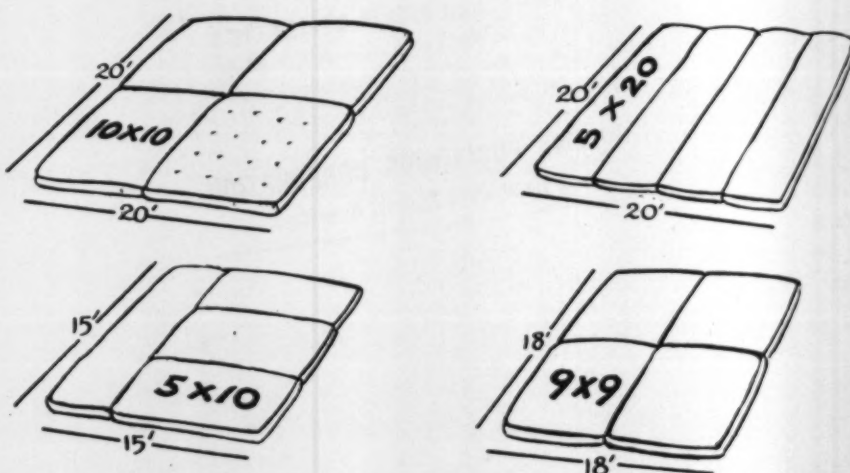
For active wrestling, the mats should always be covered. The most common cover used is a heavy soft-surfaced duck or Canton flannel canvas generally known as a lay-over

or turn-under cover. The lay-over covers are a foot or more larger than the actual mat surface. The cover should be stretched tightly so that a smooth surface is available. In order to insure a smooth, snug fit, the part of the cover extending beyond the mat proper may be folded under the edge of the mat. The tuck may be secured with horse blanket safety pins, the cover being fastened to the under side of the mat. Some mat covers are equipped with grommets along the edge to facilitate lacing with heavy cord. If the cover has no grommets and is not large enough to fold under the mat, it can be fastened to the floor by laths and small nails. The mat cover should be laundered at frequent intervals to eliminate as much as possible the danger of infection.

Some coaches use a rubber cover for their practice sessions because it can easily be washed daily and is thus more sanitary than the canvas cover. This may be desirable for large physical education classes. However, most wrestling coaches prefer the canvas cover. The friction of the rubber cover seems greater and hence vitiates the proper timing of maneuvers. Also, since canvas covers are generally used at regularly scheduled meets, coaches prefer to use such covers during their regular practice sessions in order to approximate match conditions. The canvas makes a fast footing and causes fewer mat burns.

During the off-season, if some of the boys are interested in improving their technique, a serviceable home-

\*Intercollegiate Wrestling Guide, No. 429 in Spalding's Athletic Library, 25c.



SUGGESTIONS FOR MAT COMBINATIONS: Where one-piece mats are unavailable for wrestling, several of the regular gym mats may be used by lacing the edges together with a strong rope.



made mat may be constructed by spreading a three-inch layer of sawdust on a floor and nailing a canvas over the surface. Since the material for the cover can be purchased in most dry goods stores, it may sometimes pay to make up a cover than to invest for a finished product.

### Wrestling ring

In the Intercollegiate Wrestling Guide, in regard to the ring, the following specifications are recommended: "The area of the mat, when ropes are used, shall not be less than 20 by 20 feet. Three one-inch ropes shall be tightly stretched two feet, three feet, and four feet, respectively, above the mat. These ropes shall extend in from four supporting posts, which shall be placed at least 18 inches back from the corners of the ring. Cotton ropes are recommended, but if manila or sisal ropes are used they must be wrapped with bunting or other soft material to avoid rope burns. To prevent the spreading of ropes during the matches, they shall be securely fastened together by 12 vertical three-eighths inch ropes, three of which shall be placed equidistant on each side of the ring."

Different kinds of removable wrestling rings are now available and can be obtained in various sizes. Although this equipment is portable, the manufacturers have built it to withstand the constant strain to which the ropes are subjected. This equipment is an added expense and many schools do not buy it, although the ropes many times prevent the wrestlers from falling on the hard floor.

### The scale

A good strong, durable scale should be available in order to weigh the boys and segregate them into proper weight classes. The modern dial scale is the most desirable, but generally the most expensive. Most schools already have a scale and are willing to let the coach use it during the wrestling season. The boys should learn to step on the scale lightly, and handle it with care; otherwise it will soon lose its reliability.

The wrestlers should develop the habit of checking their weights and marking them on a weight chart before and after each practice session. This will enable both the boy and the coach to keep a close check on the athlete's physical condition. It is a known fact that different scales sometimes show slight discrepancies. For this reason, the same scale

(Concluded on page 29)

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## New Books on the Sportshelf

**BUDGE ON TENNIS.** By J. Donald Budge. Pp. 180. Illustrated. New York: Prentice-Hall, Inc. \$2.

**D**ON BUDGE is the right man to expound the theories of tennis and its inexhaustible variety of playing methods. He is one of those phenomenal players who can do no wrong, technically speaking. His timing is perfect. His rhythm is beautiful. He is a master of stroke production, and what is more he knows how and when to employ every stroke in his repertory. Walter L. Pate, captain of last year's United States Davis Cup team, thinks Budge is the greatest player of all time. There is no question that he is head and shoulders above the field today.

The tennis potentate's debut as a word slinger is eminently satisfactory. His pen seems to have the same fluency as his stroking. In his book, the world's champion analyzes and describes fully the technique of stroke production and the strategy of match play required by the beginner and the intermediate player to develop their games to the fullest potentialities.

In very readable, easy-to-follow terms, Budge outlines the techniques of the game in their order of importance. The first fundamental of the game, as he sees it, is the mastery of the bread and butter strokes—the forehand and backhand drive from the back of the court. Everything else is secondary, he believes, and can wait on the building of the ground strokes. After a comprehensive discussion of these strokes, the author outlines in detail the other basic weapons indispensable for the development of a winning game—the serve, smash and volley. He then devotes a chapter to the subordinate or auxiliary shots—the half volley, lob, chop and drop shot. The discussion of strokes is followed by two very excellent chapters on psychology and strategy and the doubles game.

The winning game today is the fruition of the best theories and practices of the players who have served as trail blazers, and Budge does not ignore what has gone before him. Since he is most familiar with his own methods, he is naturally partial to them and advocates them. But at the same time he does not emphasize them to the seclusion of those used by the great players of the United States and other nations during the past 30 years. He makes the most of every opportunity to describe the techniques and methods of the great players of the past and present.

The book is illustrated with 64 progressive action pictures of Budge himself. These illustrations were taken from three reels of slow motion pictures, filmed under the direction of Walter L. Pate. Each stroke is shown in eight pictures and takes up both sides of a page.

**BASEBALL (The Fan's Game).** By Gordon S. "Mickey" Cochrane. Pp. 189. Illustrated. New York: Funk & Wagnalls Co. \$2.

**M**ICKEY COCHRANE'S *Baseball* is much more than a deeply instructive and highly entertaining volume on the national pastime. It's a success story modestly told of a player who many believe to be the greatest catcher of all time. He was one of the brightest individual stars in the glittering galaxy that brought pennants to Philadelphia in 1929, '30 and '31. Later, as player-manager of the Detroit Tigers he piloted the team through two pennants and one world's championship. He could serve and he could command; he could follow and he could lead.

A master teacher, coach and manager, the Back Bay Irishman reveals the secrets behind the great teams he played on, expounding the finer points of the major league game. He stresses the strategic maneuvers of the offense and defense employed in both big leagues, the points on which the two leagues are in accord and those on which they differ.

With 13 years of top-flight baseball behind him, Cochrane is able to discuss authoritatively the fundamentals that go into the making of a successful player. He outlines the rudiments of the game: strategy, psychology, batting, defense, hit-and-run signs, handling pitchers, etc. He has a thousand and one interesting little anecdotes at his command and he uses them to hammer home various points. These stories enable the reader to catch a glimpse of another side of the professional game—the intrigues, heartaches and thrills which form its back drop.

The book is a mine of facts for the fan, and a rich fund of helpful hints to the coach. It is illustrated with 33 full page plates of famous major league players.

**SWIMMING POOL STANDARDS.** By Frederick W. Luehring. Pp. 274. New York: A. S. Barnes & Co. \$5.

**I**N RECENT years, swimming pool construction has been going on rapidly with a minimum of information relative to the function of the pool and the needs of those who are to use it. The results have often been far from satisfactory. There has been a marked tendency to copy installations elsewhere without sufficient analysis of the function the pool should serve, thus perpetuating the common errors so frequently found even in recent and expensive pools.

*Swimming Pool Standards* provides guiding standards which will prove of tremendous aid to those charged with the responsibility for the planning, construction and administration of swimming pools. In the preparation of this book, the author, a professor of physical education at the University of



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Pennsylvania, covered thousands of sources, both old and new, and visited hundreds of pools.

With the exhaustive research to go on, Dr. Luehring formulates certain functional guiding principles to serve as criteria for the swimming pool in educational institutions. Each standard is presented with its source and justification, and where necessary a functional analysis indicating the basis for its selection. The source references cited enable the reader to consult them for more detailed information, and to think through with the author the educational significance of the standards presented.

The criteria the author sets up are indicative of the major implications which a desirable pool should include. They may be regarded as a basic code of specifications and fundamental rules for the construction of a pool.

**THE NEW ARCHERY** (*Hobby, Sport and Craft*). By Paul H. Gordon. Pp. 420. Illustrated—photographs and drawings. New York: D. Appleton-Century Co. \$3.50.

**BRETHREN** of the bow and arrow will find *The New Archery* a veritable gold mine of information. Here, perhaps for the first time, archery in all its phases has been given an inclusive manual treatment. The hobby, the sport and the craft of this fascinating pastime are all covered comprehensively and lavishly illustrated with nearly 150 drawing and photographs.

The book first presents the attractions of archery as a hobby through a sketch of its romantic history the world over and of its revival in recent times to widespread popularity. The next section of the book deals with the technique of the sport, explaining the various forms of competition, the methods of scoring and the correct technique of aiming and shooting.

The third section contains perhaps the most exhaustive practical information on archery craft ever offered in a single volume. The author strips the veil of mystery surrounding the making of bows and arrows by professionals, and proves there is no secret to the art. He gives the amateur tackle-maker full-length treatments, graded for difficulty and by means of the best hand methods, of all forms of archery equipment, particularly of such items as were formerly made only by professionals or omitted from craft books as inconsequential or too difficult. He devotes 14 full chapters to the manufacture of every conceivable type of bowstring, bow, arrow, target and leather accessory.

The last section of the book should prove of particular interest to the hundreds of school men who are now preparing to assume camp administrative responsibilities. In this section, the author presents a comprehensive organized program approach to the teaching of archery in camp, school and club, with particular emphasis on the camp program. The text includes an extensive bibliography and a glossary of archery terms.

**FENCING.** By G. V. Hett. Pp. 131. Illustrated. New York: Pitman Publishing Corp. \$1.50.

**MR. HETT** is an active fencer who cultivated the art during his schooldays at Harrow (England), as captain of the Cambridge University team and now as a British international and Olympic representative. His book expresses the outlook of a man in the prime of his fencing career whose advice to beginners is based on everyday experience as well as on the teachings of the masters.

The famous internationalist gives a complete account of modern fencing methods with all three weapons—foil, epee and sabre, and describes practically every form of attack and defense in simple, readable terms. He also includes several valuable chapters on equipment and clothing, training, choice of weapons, how to start, general tactics, the art of judging, and the various rules governing competition. The rules will assist the smaller clubs in organizing their first competitions and matches.

The book is copiously illustrated with photographs, most of which were taken specially for the text. These pictures are large and clear and show the finer points of the art. Included also are numerous single action shots from actual fencing matches. The book is excellently presented and will tell the beginner just what he wants, and ought, to know without a bewildering mass of instructions.

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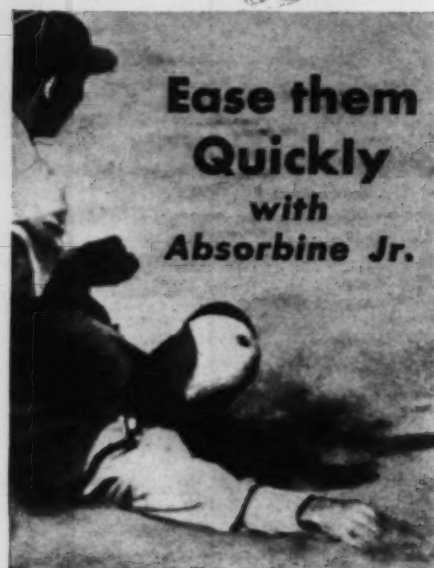
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# BASKETBALL RULES CHANGES

By H. V. Porter

Secretary, National Basketball Committee

**T**HE National Basketball Committee of the United States and Canada went into its annual two-day conclave this year, armed with three general resolutions: to formulate the code for 1939-40, to outline plans for the collection of various statistics and to coordinate experimental work for the coming season. Meeting in New York City early last month, the Committee, before acting on the rules, put in a long day going over subcommittee reports and recommendations by organized groups.

There was considerable discussion relative to the possible use in future years of a modified backboard. It was pointed out that the edges and corners of the prevailing bank are rarely used in actual play and that the superfluous areas are detrimental because of changes in style of play and court markings. A streamlined board would have the following advantages:

1. It would permit freer use of the four-foot end space and relieve congestion in the area in front of the basket.

2. It would greatly increase the visibility of the basket from corners of the gymnasium and from directly behind the backboard.

3. The removal of the lower edge of the backboard would increase the space under the basket from which a goal might be made.

4. It would simplify the bridgework necessary for suspension since the weight would be reduced by nearly half and the span would not be so great as to cause warping or twisting.

These facts were verified at a practical demonstration in the New York University School of Education gymnasium. The Committee watched members of the N.Y.U. team fire away at three new types of banks erected by the Fred Medart Mfg. Co. of St. Louis, Mo. That the Committee was favorably impressed was proven by its subsequent action.

The legislative body instructed the Editorial Committee to reserve at least one page in the almanac section of the guide for diagrams and material on modified backboards. In order to give equipment manufacturers something to go on, the article will carry a diagram showing a board with little space below the level of the ring and with rounded corners, i.e., with the edges semi-circular or oval. The distance from the basket level to the top of the board is to be between 27 inches and 30 inches and the width of the board is to be between 54 inches and 60 inches. Such a board is to be considered the standard for experimental work until such time as the most desirable shape and size may be determined.

## Rules Changes

Following is a list of the more important rules changes for 1939-40:

**PLAYING COURT:** It will be specified that end lines shall be four feet behind the backboards unless space will not permit. In that case the end lines may be any distance between two feet and four feet behind the backboards.

**BALL:** The tolerance in bouncing reaction of a ball will be between a minimum of 49 inches and a maximum of 54 inches.

**TIME-OUTS:** 1. Any player will be permitted to request a time-out provided it is done at the proper time as specified in Rule 11, Sec. 1.

2. Interpretations which had been made relative to how a substitution might originate following a goal were authorized. These will be taken care of through slight modifications in the questions and answers following Rule 11, Sec. 2.

3. In addition to the five permissible charged time-outs, a team will be allowed one time-out for each overtime period.

**FREE-THROW:** After the free throw following a technical foul, the offended team shall put the ball in play from out of bounds at the middle of a sideline.

**VIOLATIONS:** 1. Rule 14, Sec. 2 and 7 will be reworded to be in harmony with a change in Sec. 9. (See next paragraph.) The committee also adopted the interpretation that the restriction for entering the lane applies only to touching the floor in the lane, i.e., the plane of the lane line is not to be considered the restraining area and a player is not in the lane until he has touched the floor.

2. It is to be considered a violation if a free throw does not enter the basket or touch the ring even though it might touch the backboard. Touching of the ball by any player before it touches the ring is assumed to end the free throw.

**PERSONAL FOUL:** Whenever a player who is in the act of throwing for a goal is fouled from behind or is roughly handled from any direction, two free throws are to be awarded regardless of whether the goal is made or missed. Also, after any personal foul, the Captain of the offended team may choose to refuse the free throw (or last one in case of a multiple throw) and to put the ball in play from out of bounds at the middle of the sideline. Such option will not be allowed in the case of a double foul.

The Committee discussed several interpretations which had been made during the current season and, in general, sanctioned those which had been made by the official interpreter. Definite action was taken relative to the following:

1. If an overtime is played because of an error in the score which is not discovered until after overtime play has started or because of a lack of knowledge of the proper rule relative to tie games, the team which was the winner at the end of the regular play-



ing time or at the end of the preceding overtime period is to be considered the winner regardless of what may have happened in the overtime.

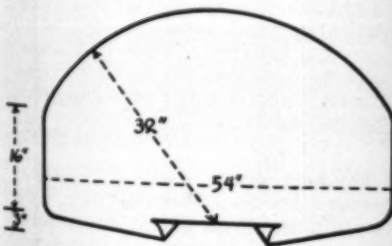
2. The Questionnaire Committee was instructed to give some attention to problems which arise because of diving for the ball and to attempt to determine sentiment relative to this practice.

The Committee sanctioned the publication of a special summer school edition of the rule book by the National Federation. This will be similar to the book which was published early in June last year. It will be sold only to coaching schools and groups of coaches or officials who are sponsoring meetings during the summer. It will not be sold through dealers.

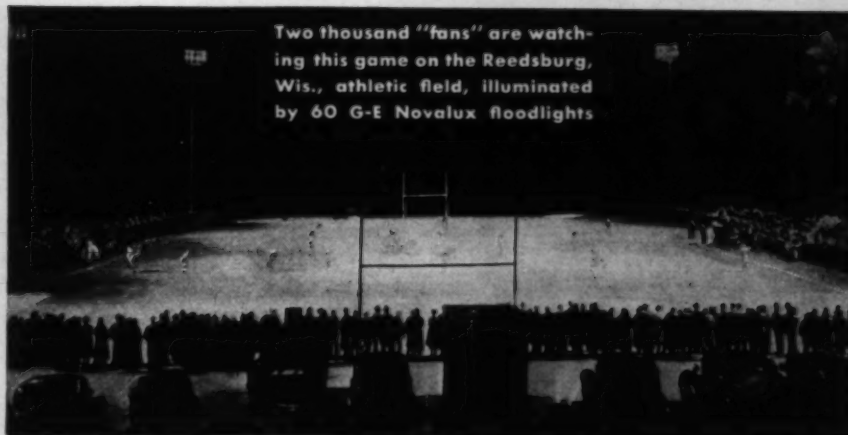
The various sub-committees were active in preparing blanks for the collection of statistics relative to the game and in outlining experimental work which might be undertaken by groups throughout the country. Such work included tests to determine (a) the best bouncing reaction of a ball, (b) the best size of ball for various age groups, (c) the part of the backboard which is actually used, (d) how much use is being made of the four-foot end space and (e) possibilities in various proposed modifications in timing methods.

It was decided to hold the 1940 annual meeting at Kansas City, Mo., on March 30 and 31. The National Collegiate tournament finals are being held in the same city on the evening of March 30.

The annual meeting was attended by the following members: F. C. Allen, John Brown, John Bunn, Forrest Cox, J. H. Crocker, Sumner A. Dole, J. Mark Good, E. J. Hickox, A. F. Jefferess, Frank P. Maguire, H. G. Olsen, Curtis Parker, H. V. Porter, Floyd A. Rowe, J. W. St. Clair, H. H. Salmon, Jr., Oswald Tower. In addition to the voting members, Chairman Emeritus L. W. St. John of Ohio State University and George T. Hepbrun of New York were in attendance at several of the sessions.



In an attempt to crystallize the sentiment of the National Basketball Committee relative to a modified backboard, Mr. H. V. Porter, secretary, and Mr. Oswald Tower, editor of the Guide, collaborated on this working drawing, which will be included in the almanac section of the 1940 Guide. The cut-out below the basket ring is contingent on the development of a basket which will fasten to the lower edge of the board with braces to the three-inch fly. The drawing is offered as a guide for experimentation.



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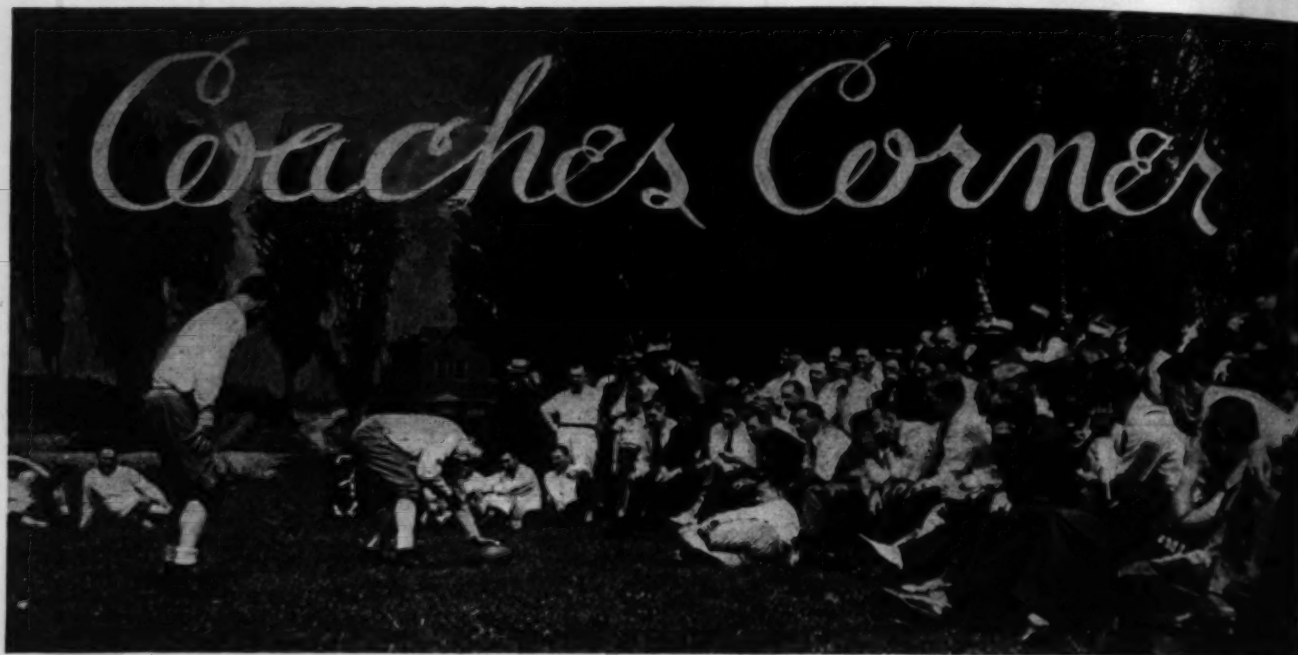
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If you have something for this column send it to Bill Wood, Evanston Township High School, Evanston, Illinois.

**Our first letter** this month finds us down in Tucson, Ariz., with Coach R. T. Gridley.

"In 1929 my basketball team played Steve Couthie's Mesa High School boys. During the first half Mesa scored 10 points, while we were going scoreless. In the second half we managed to make 9 points while holding Mesa scoreless. Although the score was low, no stalling tactics were used.

"Several years ago our cub football team played the Hayden High School team in that mining community. During the course of the game our kicker, in attempting to get off a punt, kicked the ball backward. It bounded wildly across the goal line into the end zone and eventually over a board fence that served as the end of the field. There was a wild scramble for the ball. As the Hayden boys knew the location of the hole in the fence, one of them was able to capture the ball out of the field of play. The official incorrectly ruled it a touchdown."

**Coach C. P. Parker** of Claremont, N. H., reports a game between Stevens High School and Springfield in which three home runs were hit on four pitched balls. He would like to know if this performance has ever been equalled or surpassed. The final score of the game, Coach Parker writes, was 5 to 3. Incidentally, this makes our roll call of states almost complete. Have we heard from Rhode Island and Delaware?

**We don't know** the enrollment of the high school at Unadilla, Neb., but it doesn't matter, anyway. Everyone for miles and miles knows about freshman Norman Masters, Unadilla's one-man track team. In an interclass meet not long ago, he won every event except the relay.

**Can't somebody do something** about those track teams that carry the colors of Little Rock, Ark.? They have won about seventy-five straight meets during the past few years.

**Melrose, Fla.**, a school with only 25 boys enrolled, further handicapped by a practice schedule limited to 30 minutes each day, lays claim to any glory that may be passing around at this time upon the basis of the following record in basketball: 75 victories in the last 102 games; having never lost two consecutive games; in 12 tournaments, including two state meets, having never lost except to a finalist; two full seasons without having a single player leave a game on four personals; three full seasons without having a player miss a game because of illness or injury; two games in which only one foul was called on Melrose; three games in which opponents didn't score a field goal and nine in which opponents scored only one goal; a six years' defensive record of 16.2 points per game.

**It seems that Nebraska** comes in for more than its share of the unusual this month. In a Scotts Bluff bowling tourney all five members of a local team turned in identical scores of 180 in the second game of their series. The players were: O. C. Olsen, L. G. Eckle, Wenwell Cox, H. F. Vierregg, and B. M. Diers.

**Warming up an old chestnut** for next fall. During a spring scrimmage, the coach turns his head momentarily. The officials penalize the varsity-team-in-the-making fifteen yards for having the backfield in motion. When informed of the reason for the penalty, the coach snaps, "That's encouragin'. That's the first motion anybody has been able to detect in our backfield all afternoon."

**Of course** it will never come to light, but we wonder if any high school coach in the country receives more than the

reported \$6,800 that Bill Brockerick receives from Salem, Mass., for coaching the high school football team.

**Among the current list** of pitchers of "no hit" fame in Illinois, is Ed Boyk of the Niles Township High School, who turned the trick recently in a 9 to 0 victory over Woodstock. (How did that happen, Larry?) A few days earlier Boyk had held Franklin Park to one hit. He is a junior and throws right-handed.

From Eau Claire, Wis., where Mark Almli holds forth, comes tall talk of one Douglas Forster, a 17-year-old high school pitching marvel who has two "no-hitters" to his credit this season. His first was a 14 to 0 affair against Whitehall in which no runner reached first base and in which Forster struck out fifteen. Aquinas High of La Crosse was the second victim, 4 to 0. Three men got to first on two errors and a walk. Twelve struck out.

**In the college bracket** we find Rube Thompson, a senior at Macomb Teachers College and a member of the all-America collegiate nine that toured England last summer, turning in a no-hit, 15 to 1, victory over Augustana College.

**The best record** in collegiate history, perhaps, is that of Hank Borowy, Fordham pitcher. Until he lost this spring to Villanova, 7 to 2, he had rounded up 22 consecutive victories for the Rams.

**A thousand thanks** for the exceptionally generous help all of you have given "Coaches' Corner" this season. Bigger and better next year—if you want to make it that way. Send in your contributions as early in the month as possible and we'll try to keep up our end of the correspondence better than we have been doing in the past. Happy days this summer.

BILL WOOD



## For Wrestling

(Continued from page 23)

should be used for weighing in contestants at home meets.

During the practice session, anything in the way of gym suits, sweat clothes, etc., may serve the purpose of a uniform. The outfit should be cheap, easily cleaned and one that will protect the shoulders, elbows and knees from mat burns until the skin has toughened. Some boys use heavy-knit underwear and merely slip a pair of shorts over the underwear to serve as overights. A supporter inside the clothing is, of course, essential. For footwear, any type of gym or tennis shoe without hooks will do. An extra sweat shirt is useful to prevent the boy from catching cold while he is resting or going to the dressing room. The wrestler's entire wardrobe should be laundered at least once a week to be kept sanitary.

### The costume

For regular bouts, when the squad is sent into competition against other schools, the matter of costumes should be considered with more attention to attractive details. Clean, neat, well-appearing costumes not only give the boys a feeling of confidence but also impress the audience favorably. The school wrestler should wear full-length tights with a large, black elastic supporter or overights, the latter being the more popular of the two at present. A light ankle-height shoe with rubber sole is desirable for footwear.

The team's costumes should by all means be uniform and clean, as there is nothing more offensive to the audience than to see the wrestlers compete in dirty, torn or slovenly uniforms. To complete the natty effect, the wrestler may appear in a clean sweatshirt trimmed in the school colors, which he should remove after he has entered the ring. The right type of boy in the suit, of course, is the important thing. But a boy can wrestle just as well in a neat-looking outfit as he can in an untidy one.

### Sun lamps

A good sun lamp is an invaluable asset in the wrestling room. There is nothing like it to eliminate skin infections, colds and similar ailments which occasionally afflict wrestlers. The initial cost of the lamp may seem quite high, but it will soon pay for itself by trimming down doctor bills and insuring good health.

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# Guide to Sporting Goods Equipment & Training Supplies for High School Buyers

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## ATHLETIC FIELD SUPPLIES

### Bleachers and Grandstands (Portable)

Giant Mfg. Co.  
Fred Medart Mfg. Co.  
J. E. Porter Corp.  
Universal Bleacher Co.  
Williams Iron Works  
Winkler Portable Bleachers

### Fences

(Wire fences for enclosing athletic fields)  
National Sports Equip. Co. (canvas enclosures)  
Page Steel & Wire Div., Amer. Chain & Cable Co.  
Petersen & Co. (canvas enclosures)

### Floodlighting Equipment

American Playground Device Co.  
Benjamin Electric Mfg. Co.  
Crouse-Hinds Co.  
General Electric Co.  
Giant Mfg. Co.  
Goodrich Electric Co.  
Monarch Industries  
Westinghouse Electric & Mfg. Co.

### Markers

Giant Mfg. Co.  
P. Goldsmith Sons, Inc.  
J. E. Porter Corp.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

### Paper Cups

Lily-Tulip Cup Corp.

### Dust Settler

Gulf Oil Corp.

### Scoreboards

(Electric)

Decker Mfg. Co.  
Du Craft's, Inc.  
The Fair Play Co.  
Nevco Scoreboard Co.  
J. E. Porter Corp.  
Simplex Co.

### Sound Amplifying Systems

RCA Mfg. Co.  
Sundt Engineering Co.  
Westinghouse Electric & Mfg. Co.

## ATHLETIC SUPPORTERS

Bike Web Mfg. Co.  
Champion Knitwear Co.  
C. S. Distributing Co. (itch treatment)  
Dubow Mfg. Co.  
P. Goldsmith Sons, Inc.  
Rawlings Mfg. Co.  
Seamless Rubber Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

## BALLS

(See Complete Equipment headings under Baseball, Basketball, Football.)

WRITE DIRECTLY TO THE COMPANIES FOR THEIR CATALOGUES. ADDRESSES WILL BE FOUND ON PAGE 1. FOR ADDRESSES NOT LISTED WRITE SCHOLASTIC COACH, 250 E. 43rd ST., NEW YORK, N. Y.

## Bladders

(For all inflated balls)

Cullum & Boren Co.  
P. Goldsmith Sons, Inc.  
Rawlings Mfg. Co.  
Seamless Rubber Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

## Rubber Compo. Balls

(Football, Basketball, Playground Balls)  
P. Goldsmith Sons, Inc.  
Seamless Rubber Co.

## BADMINTON

### Complete Equipment

(Birds, Nets, Rackets)

P. Goldsmith Sons, Inc.  
Pennsylvania Rubber Co. (birds)  
Rawlings Mfg. Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

## BAND UNIFORMS

The Lilley-Ames Co.

## BASEBALL

### Complete Equipment

(Balls, bats, bases, uniforms, gloves, caps, shoes, bags, scorebooks, masks, protectors, shin guards)

Cullum & Boren Co. (uniforms)  
Dubow Mfg. Co.  
P. Goldsmith Sons, Inc.  
Lannom Mfg. Co. (balls)  
National Sports Equipment Co. (bases)  
Rawlings Mfg. Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

### Bats

Hanna Mfg. Co.  
Hillerich & Bradsby Co.

### Home Plates

Cullum & Boren Co.  
National Sports Equipment Co.  
Seamless Rubber Co.  
U. S. Rubber Co.

### Shoes

(See special listing under Shoes)

## BASKETBALL

### Complete Equipment

(Balls, uniforms, warm-up suits, shoes, goals, scorebooks)

Champion Knitwear Co. (uniforms)  
Cullum & Boren Co. (uniforms)  
Dubow Mfg. Co.  
P. Goldsmith Sons, Inc.  
Mishawaka Rubber & Woolen Mfg. Co.  
O'Shea Knitting Mills (uniforms)  
Rawlings Mfg. Co.

John T. Riddell, Inc. (balls)  
Schutt Mfg. Co. (goals)  
Southern Mfg. Co. (uniforms)  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

## Backstops

EverWear Mfg. Co.  
Fred Medart Mfg. Co.  
J. E. Porter Corp.  
Schutt Mfg. Co.

## Shoes

(See special listing under Shoes)

## CLEANERS, CONDITIONERS

The Barry Reclaiming Co.  
Circle System  
Ivory System  
The Kelley Co.

## EMBLEMS

(Felt and Chenille for Sweaters, Jerseys)

Baldwin Regalia Co.  
Champion Knitwear Co.  
Cullum & Boren Co.  
Eagle Regalia Co.  
P. Goldsmith Sons, Inc.  
The Kelley Co.  
National Sports Equipment Co.  
O'Shea Mfg. Co.  
Rawlings Mfg. Co.  
Southern Mfg. Co. (felt)  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

## FENCING EQUIPMENT

(Foils, Sabres, Epee Swords, etc.)

Castello Fencing Equipment Co.  
Albert Grasson & Son  
Vince Fencing Equipment, Inc.

## FOOTBALL

### Complete Equipment

(Balls, headgear, jerseys, pants, shoes, shoulder pads, etc.)

Champion Knitwear Co. (socks, pants, jerseys)  
Cullum & Boren Co.  
Dubow Mfg. Co.  
P. Goldsmith Sons, Inc.  
Hodgman Rubber Co. (sideline parkas)  
O'Shea Knitting Mills (shoulder pads, blocking pads, jerseys, pants)  
Rawlings Mfg. Co.  
John T. Riddell, Inc. (balls)  
Southern Mfg. Co. (jerseys)  
A. G. Spalding & Bros.

### Dummies and Machines

Gilman Sporting Goods Co.  
The Kelley Co.  
National Sports Equipment Co.  
Petersen & Co.  
Wilson Sporting Goods Co.

### Posters

Don Spencer Co.

### Shoes

(See Special listing under Shoes)



**GYMNASIUM EQUIPMENT****Complete Equipment**

Fred Medart Mfg. Co. (gym seats)  
J. E. Porter Corp. (apparatus)  
Universal Bleacher Co. (bleachers)

**Cloth**

(For Gym Uniforms)

Durene Assn. of America (mercerized yarn)  
Arthur Kahn Co.

**Floor Finishes**

American Crayon Co.  
C. B. Dolge Co.  
Hillyard Chemical Co.  
Huntington Laboratories, Inc.  
Midland Chemical Laboratories, Inc.  
Vestal Chemical Laboratories.  
West Disinfecting Co.

**Gym and Wrestling Mats, Covers**

American Hair & Felt Co. (mat felt)  
The Kelley Co.  
Fred Medart Mfg. Co.  
National Sports Equipment Co.  
Petersen & Co.  
J. E. Porter Corp.

**Gym Suits**

(Girls' Gym and Play Suits)

Champion Knitwear Co.  
P. Goldsmith Sons, Inc.  
National Sports Equipment Co.  
Southern Mfg. Co.

**Gauges**

(Athletic, pressure)

P. Goldsmith Sons, Inc.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

**Shoes**

(See special listing under Shoes)

**Sound Amplifying Systems**

RCA Mfg. Co.  
Sundt Engineering Co.

**ICE HOCKEY****Complete Equipment**

(Pucks, sticks, skates, uniforms)

P. Goldsmith Sons, Inc.  
Hodgman Rubber Co. (sideline parkas)  
Rawlings Mfg. Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

**Pucks**

Seamless Rubber Co.  
U. S. Rubber Co.

**LEATHER PRESERVATIVES**

P. Goldsmith Sons, Inc.  
Ivory System  
John T. Riddell, Inc.

**LOCKER ROOM EQUIPMENT****Baskets**

American Wire Form Co.  
Fred Medart Mfg. Co.  
J. E. Porter Corp.

**Clothes Hangers**

Tanase Specialty Co.

**Foot Baths**

American Playground Device Co.  
C. B. Dolge Co.  
EverWear Mfg. Co.  
Hillyard Chemical Co.  
Huntington Laboratories, Inc.  
National Sports Equipment Co.  
J. E. Porter Corp.

**Foot Bath Solutions**

C. B. Dolge Co.  
Hillyard Chemical Co.  
Huntington Laboratories, Inc.  
Onox Antiseptic Co.  
Pennsylvania Salt Mfg. Co.  
J. E. Porter Corp.  
Vestal Chemical Laboratories  
West Disinfecting Co.

**Lockers**

Fred Medart Mfg. Co.

**Locker Benches**

EverWear Mfg. Co.  
Fred Medart Mfg. Co.  
J. E. Porter Corp.

**Locker Room Cleansers**

C. B. Dolge Co.  
Hillyard Chemical Co.  
Huntington Laboratories, Inc.  
Pennsylvania Salt Mfg. Co.  
West Disinfecting Co.

**Tile Cleansers**

C. B. Dolge Co.  
Hillyard Chemical Co.  
Huntington Laboratories, Inc.  
Vestal Chemical Laboratories

**Towels**

Champion Knitwear Co.  
George McArthur & Sons

**MEDALS, TROPHIES**

L. G. Balfour Co.  
Eagle Regalia Co.  
Loren Murchison & Co.  
Fred Turbyville

**PHOTOGRAPHIC EQUIPMENT****Motion Picture Cameras**

Bell & Howell Co.

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(For sale or hire)

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Hood Rubber Co. ("Badminton")  
Nu-Art Films Inc.

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American Playground Device Co.  
EverWear Mfg. Co.  
Giant Mfg. Co.  
P. Goldsmith Sons, Inc.  
Fred Medart Mfg. Co.  
J. E. Porter Corp.  
Rawlings Mfg. Co.

**RIFLERY**

Winchester Repeating Arms Co.

**SHOES****Complete Equipment**

(Baseball, Basketball, Football, Gym, Track, Tennis)

Cullum & Boren Co.  
Dubow Mfg. Co.  
P. Goldsmith Sons, Inc.  
Rawlings Mfg. Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

**Baseball**

John T. Riddell, Inc.

**Basketball**

Converse Rubber Co.  
Hood Rubber Co.  
Mishawaka Rubber & Woolen Mfg. Co.  
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### Gym

Converse Rubber Co.  
Hood Rubber Co.  
Mishawaka Rubber & Woolen Mfg. Co.  
John T. Riddell, Inc.  
U. S. Rubber Co.

### Tennis

Converse Rubber Co.  
Dunlop Tire & Rubber Co.  
Hood Rubber Co.  
Mishawaka Rubber & Woolen Mfg. Co.  
U. S. Rubber Co.

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Converse Rubber Co.  
Hood Rubber Co.  
John T. Riddell, Inc.  
U. S. Rubber Co.

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O'Shea Knitting Mills  
Rawlings Mfg. Co.  
Southern Mfg. Co.  
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O'Shea Knitting Mills  
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Southern Mfg. Co.  
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Vassar Co.  
Wilson Sporting Goods Co.

### Bathing Suits (Rubber)

Seamless Rubber Co.  
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American Playground Device Co.  
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Ever Wear Mfg. Co.  
Fred Medart Mfg. Co.  
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### Complete Equipment

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Pennsylvania Rubber Co. (balls)  
Rawlings Mfg. Co.  
A. G. Spalding & Bros.  
Wilson Sporting Goods Co.

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J. E. Porter Corp. (also posts, reels)

### Dust Settlers

Gulf Refining Co.

### Nets

American Playground Device Co.  
EverWear Mfg. Co.  
Page Steel & Wire Div., American  
Chain & Cable Co.

### Shoes

(See special listing under Shoes)

## TICKETS

Elliott Ticket Co.  
National Ticket Co.  
Toledo Ticket Co.  
Weldon, Williams & Lick

## TIMERS

(Stop Watches)

The Fair Play Co.  
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A. R. & J. E. Meylan  
Nevco Scoreboard Co.  
Jules Racine & Co.  
Rawlings Mfg. Co.  
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Shoes

(See special listing under Shoes)

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Wilson Sporting Goods Co.

Absorbent Cotton

Bike Web Mfg. Co.

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Hynson, Westcott & Dunning, Inc.

(Mercurochrome)

Iodine Educational Bureau

Rawlings Mfg. Co.

Athlete's Foot Preventives

C. S. Distributing Co.

C. B. Dolge Co.

Hillyard Chemical Co.

Huntington Laboratories, Inc.

R. & H. Medical Co. (treatment)

Onox Antiseptic Co.

Pennsylvania Salt Mfg. Co.

J. E. Porter Corp.

Athletic Orthopedic Equipment

Chesterman & Streeter, Inc.

J. E. Porter Corp.

Bandages

Becton, Dickinson & Co. (Ace)

Bike Web Mfg. Co.

Duke Laboratories, Inc.

Rawlings Mfg. Co.

Bandages

(Gauze and Adhesive)

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Seamless Rubber Co.

First Aid Kits

Bike Web Mfg. Co.

Duke Laboratories, Inc.

Hillyard Chemical Co.

J. E. Porter Corp.

Rawlings Mfg. Co.

Heat and Sun Lamps

General Electric Co. (sun lamps)

Hanovia Chemical Co.

J. E. Porter Corp.

Liniments

Denver Chemical Mfg. Co. (first aid dressing)

Rawlings Mfg. Co.

W. F. Young Co. (Absorbine Jr.)

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Bike Web Mfg. Co.

The Kelley Co.

Surgical Specialties

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Duke Laboratories, Inc.

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August 21—September 2, 1939

The courses to be offered in the University of North Carolina's eighteenth annual coaching school include football, basketball, baseball, track and field, boxing, wrestling, and training and conditioning.

The school will be conducted under the leadership of Robert A. Fetzner, director of athletics at the University of North Carolina. Instruction will be given by the members of the coaching staff of the University.

The staff of instruction will include: Director Fetzner, Raymond Wolf, W. F. Lange, John Vaught, P. H. Quinlan, Bunn Hearn, M. Z. Ronman, M. D. Ranson, and John Morriss.

The registration fee of ten dollars will cover tuition for all courses and dormitory room rent. No additional charge will be made for rooming accommodations for coaches' wives.

For illustrated announcement, address

Secretary E. R. RANKIN,  
Chapel Hill, N. C.

## DULUTH STATE COACHING SCHOOL

August 14-19 Tuition \$15.00

Two National Professional Football League Clubs—the New York Giants (World's Champions) and the Chicago Cardinals—will be training here while the Duluth State School is in session. Watch these two great squads work out daily as a part of your coaching course.

### STUDY UNDER AMERICA'S ACE COACHES

FRITZ CRISLER, Head Football Coach,  
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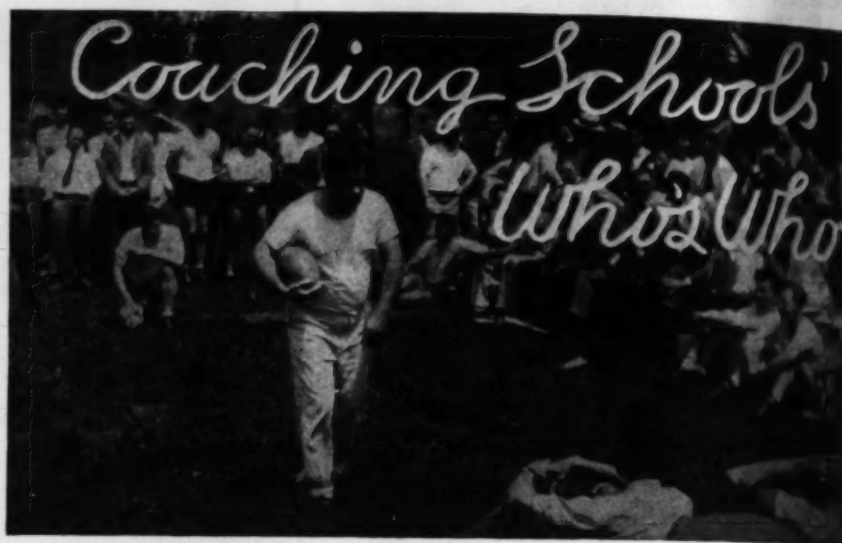
Crisler and Olson will conduct the football and basketball departments throughout the week.

One week of intensive coaching instruction taught by men who know their business and who will tell you what you want to know.

Bring the family along for a thrilling, economical vacation in America's coolest summer climate, famous for its Hay Fever Relief.

For particulars write Lloyd Peterson,  
Director, Duluth State Teachers College

DULUTH, MINNESOTA  
"The Air-Conditioned City"



"Coaching Schools' Who's Who" gives short biographical sketches of outstanding coaches who will serve as instructors in coaching schools this summer.

### Fritz Crisler

FRITZ CRISLER has always been one of the most sought after coaches in the profession. In 1932, to sign up Crisler, Princeton University threw overboard a 62-year tradition that only a Princeton man could coach a Princeton team! Crisler at the time, was a high powered football professor from the Big Ten. After starring at end for the University of Chicago, he had served his alma mater eight years as assistant coach under the venerable Amos Alonzo Stagg. Then he had demonstrated his talent for two years as head coach at Minnesota.

In 1932 he was brought to Nassau to rescue Princeton football from temporary ignominy. He proved to be just the man for the job. He sharpened the Tiger's claws to a razor-like edge and went on a prowl in search of national honors. The first year was tough sledding and the best Princeton could do was to win 2, tie 3 and lose 2. But even this was considered a successful season for Princeton. After that, the Tigers really got in their licks. In 1933 and 1935 they walloped all opponents and could have gone to the Rose Bowl had they wanted to. The lone disappointment of 1934 was a defeat by Yale.

These victories earned Crisler a warm spot in the hearts of Old Nassau, and it looked like he had inherited a permanent athletic berth. However, along about this time, Michigan authorities were scouring the land for a man to do the same job at Michigan that Crisler had done at Princeton. The Wolverines decided that Crisler himself was the only one who could do it. To land their man, they gave him not only the football reins, but an assistant professorship and the promise of the athletic directorship in time.

Fritz Crisler will be on the football staff at the Duluth State Coaching School.

### Carl Snavely

IN three years at Cornell University, Carl Snavely has proven that a winning system of football has no territorial boundaries. The brand of football that won for Snavely at North Carolina is still paying dividends above the Mason-Dixon line.

Snavely's rise to the top may serve as an inspiration to the legion of hard-working prep school coaches. After graduating with football honors from Lebanon Valley College in 1915, he coached for years at Kiski and Bellefonte Academy. The colleges were slow in recognizing his worth, but when recognition finally came he produced with a vengeance.

He was plucked out of the prep school ranks by Bucknell University, a decision the University was not to regret. Under Snavely's regime, Bucknell developed into one of the most formidable powers in the East. During the early depression years, the Bisons were the scourge of the Atlantic seaboard. With bone-crushing Clark Hinkle the spearhead of his attack, Snavely, in 1931, turned out an unbeaten eleven.

The Goddess of Good Fortune never deserted the soft-spoken coach. When North Carolina University brought him to Chapel Hill to rehabilitate the Tar Heel grid forces, Snavely quickly dispelled any doubts there may have been about his talents as a revivalist. He accomplished what many believed to be an impossible task—piloting the Tar Heels to the state championship and losing only one game out of nine.

After another successful campaign in the South, Snavely was induced to come North to take over the post at Cornell University. The rest is a matter of football history. Cornell had for years been a doormat in Eastern circles. With the new coach at the helm, however, Cayuga's tide rose and flowed powerfully on as in days of yore. In the last two years, Cornell has lost only three games in a very tough league.

Carl Snavely will be on the football staff at the Boston College and Northwestern University Coaching Schools.



### Paul D. Hinkle

THE Butler field house has been Paul D. "Tony" Hinkle's athletic kingdom for the past 18 years. Hinkle has virtually grown up with Butler athletics, and in the growing process has managed to bring national prominence to the University. Where you find sports activity at Butler, you find Hinkle. Not only does he turn out the famous Bulldog basketball teams, but he also coaches football and baseball and serves as athletic director.

The busy sports virtuoso matriculated at the University of Chicago where he was destined to become one of the greatest all-round athletes ever turned out by the Windy City institution. For three years he devoted the burden of his extra-curricular load to the three major sports—baseball, basketball and football.

After graduation he served a year at his alma mater in the capacity of freshman and assistant varsity coach. The following spring he wound up at Butler as varsity baseball and assistant football and basketball coach. He held down these three posts until 1926 when he was entrusted with the additional responsibilities of athletic director and head basketball and football coach. The combined duties became too heavy and he was forced to drop the football post—leaving him free to devote the major part of his time to the production of winning basketball teams. But in 1934 he was pre-

vailed upon to resume his football coaching duties, and he has been at the grid helm since.

**Paul D. Hinkle will give the basketball course at his own coaching school at Butler University, and also at the Daytona Beach Coaching School.**

### Bill Kern

**B**ILL KERN was the coaching sensation of the 1938 season. His Carnegie Tech Skibos came galloping out of nowhere to win the championship of the East and an invitation to the Sugar Bowl.

Kern matriculated at Pittsburgh in 1924 and became a varsity tackle the following year. After graduation he served as assistant coach at the University of Wyoming. On his way back East the following season, he stopped off at Wisconsin and played professional football for the Green Bay Packers. In 1930 he doffed his playing gear and returned to Pitt to coach the tackles.

In 1933, when Andy Gustafson left for Dartmouth, Sutherland promoted Kern to first lieutenant. It was Kern's duty to scout Notre Dame every year and he turned in a grand job. In 1937 he succeeded Howard Harpster as coach at Carnegie Tech.

**Bill Kern will be on the football staff at the Long Island University Coaching School.**

### Lynn Waldorf

**W**HEN you trace the coaching career of Lynn Waldorf from its beginning at Oklahoma City University to its termination at Northwestern, you discover that big, affable Waldorf is something of a football resuscitator. He has been a head coach at three different institutions. In each of these places he took over a broken-down eleven, and in each case the team did not stay that way very long.

The Wildcat coach learned his football under "Chick" Meehan at Syracuse, where he was an all-American tackle. After graduation he signed a three-year contract to coach at Oklahoma City. He fell heir to a team that had not won a game in its conference for four years. In Waldorf's three-year tenure, the Goldbugs won 19, lost 9 and tied 3. After his contract expired, he tossed aside his head coachship and became line coach at Kansas U.

From there he went on, as head coach, to Oklahoma A. & M. where his teams won two conference and four state titles in Waldorf's five years of coaching. The next milepost in his path was Kansas State and in one year he won the conference championship. This served to attract the attention of the larger institutions and, in 1935, Waldorf landed the Northwestern berth.

**Lynn Waldorf will stay home this summer to serve on the football staff at the Northwestern Coaching School.**

## Boston College Coaching School

Chestnut Hill, Massachusetts

June 26 to 30, 1939

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Texas Christian

**FRANK LEAHY**  
Boston College

**CARL SNAVELY**  
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**CONNIE MACK**  
Athletics

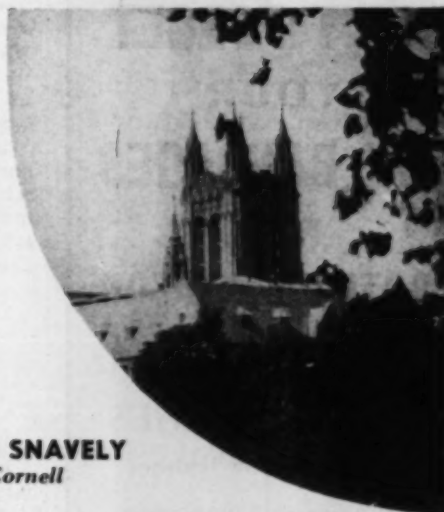
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For further information, please address all Communications to: JOHN P. CURLEY, Director of the Coaching School.



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## An Aid to Health

SINCE the high school or college athlete is entrusted to the care of the athletic administrator by parents who have faith in the latter's sincerity and fitness, it becomes a vital responsibility of the coach to take conscientious and intelligent care of the boys under his wing. No stone should be left unturned to safeguard the boy against every conceivable type of injury.

Coaches and physical education directors will agree that where health is concerned, the proverbial ounce of prevention is still worth a pound of cure. Physical fitness and proper equipment, particularly in strenuous games, play a capital role in keeping injuries down to a minimum. Hence, the problem of uniforming the player becomes a matter of prime concern. This applies not only to men in hard training but to students taking gym work or playing games inside and outside of school.

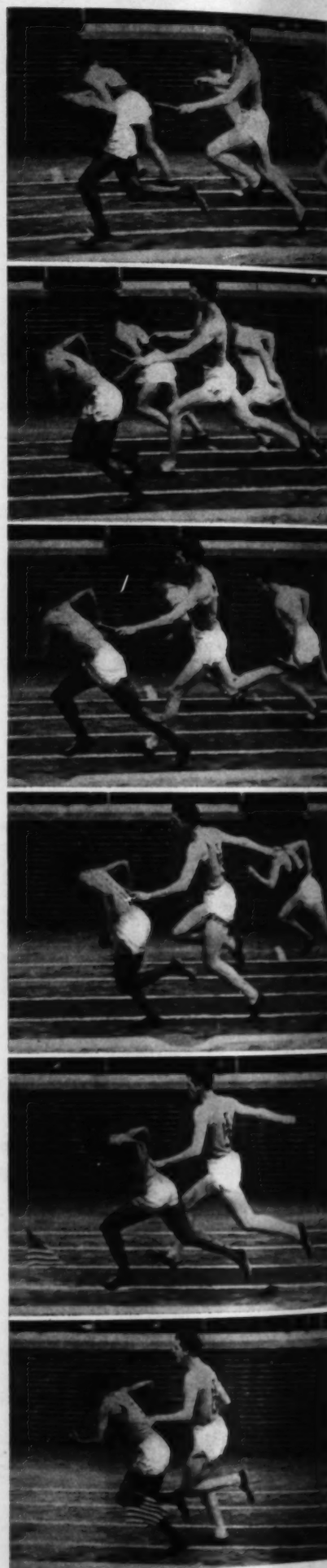
### What tests show

In this connection, a recent discovery made at the United States Testing Bureau should prove particularly interesting and valuable to the athletic administrator. Laboratory tests show that garments made of durene mercerized cotton yarn absorb and evaporate perspiration twice as fast as similar garments made of ordinary cotton yarn. Since absorption and evaporation of perspiration is vitally important to health, comfort and cleanliness, the significance of this absorbing and evaporating power is self-evident. It offers protection against colds due to sudden over-chilling and obviates skin irritation due to wet, clammy undergarments and pullovers.


In selecting the proper wearing apparel for the team or gym class, the school man cannot afford to underestimate the importance of the proper athletic underwear. Since many colds are the direct result of heavy perspira-

### Sprint Relay Pass

The non-visual method of passing the baton is universally used in all sprint relays and on those legs of medley relays in which the passer runs a distance of 300 yards or less. In this sequence, A. Sheeran is shown making a perfect non-visual pass to Captain Ben Johnson, anchor man of the 440-yards sprint relay team that won the championship at the Penn Relays last year. To receive this pass, Johnson places the fingertips of his right hand close to his hip so that the hand is in a cupped position with the thumb pointing forward. As Sheeran draws near, the Columbia anchor carefully judges the former's pace and then darts away as his teammate comes within two full strides of him. The passer, running at top speed, approaches from the rear and slips the baton into the anchor's cupped fingers. In order to make this pass, Sheeran has to utilize a full extension of the passing arm. This type of pass permits a speedy exchange at optimum speed.







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tion followed by a too-sudden cooling  
off, it follows that a proper undergar-  
ment can be of tremendous assistance  
in combating this common ailment.

Authorities contend that knitted cot-  
ton is the best all-round fabric for  
health and comfort (and cotton has  
been mercerized for years), but the  
high absorbing and evaporating power  
of mercerized cotton is news—and  
good news to every student, athlete,  
coach and physical education director.  
Proper clothing is as important as  
proper food, and the importance of  
proper underwear to health cannot be  
overestimated.

*Why shirts are advisable*

Mention should also be made of the  
tendency young men have to discard  
undershirts during the spring and sum-  
mer months, under the mistaken notion  
that they are "cooler" minus their un-  
dershirts. A survey made in connec-  
tion with the undershirt-less trend at  
a large Eastern college disclosed that  
63 percent of those surveyed did not  
wear undershirts in summer and 47  
percent never wore them.

Not only does this practice expose  
the boy to the hazards of colds, but it  
is also unhygienic. Perspiration is 98  
percent water and 2 percent solid,  
practically odorless when it leaves the  
pores. When perspiration lies on the  
skin, however, bacteria tend to decom-  
pose it, changing it from acid to alkali-  
ne, and the solid compounds then be-  
come the chief causes of body odor.  
Here again the advantages of quick  
absorption and evaporation of per-  
spiration are obvious. To keep cool the  
body must perspire, to keep still cooler  
perspiration must be absorbed and  
evaporated quickly. If young men  
knew these facts, it seems reasonable  
to assume that they would think twice  
before discarding their undershirts.

*Protection for Football*

Many physical education directors  
and instructors today insist that their  
students wear mercerized cotton un-  
dershirts. In football, many coaches  
equip, and demand that their boys  
wear, shirts with quarter-length  
sleeves. In addition to absorbing the  
profuse perspiration, this type of un-  
dershirt provides additional protection  
for the upper arms and shoulders. It  
also safeguards the athlete against ir-  
ritation caused by the shoulder pads  
rubbing against the uncovered skin.

This quarter-sleeved undershirt also  
has its uses in basketball. At the peak  
of the past basketball season, when  
the unbeaten Long Island University  
team was suddenly afflicted with an  
epidemic of boils, Coach Clair Bee pre-  
vented the epidemic from making any  
headway by equipping his entire squad  
with quarter-sleeved shirts. For the  
remainder of the season, each player  
wore one of these shirts under his regu-  
lar jersey. Not another case of boils  
was reported.

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fect on pathogenic bac-  
teria.

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away baggage is com-  
plete without a can of  
Antiphlogistine. So tie  
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as a reminder to pro-  
cure a can today!

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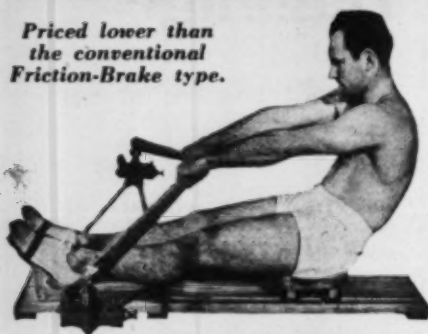
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# DUNLOP

## Care of Football Equipment

**G**RANTED that many expense items on the athletic budget do not lend themselves readily to reductions, there remains one large item on the budget wherein business-like methods may effect a considerable cost reduction, namely equipment. Not only will an intelligent purchasing program result in a material reduction of expense but it will also increase the value and the life of the equipment on hand.

The term "purchasing" covers far more ground than the simple study of equipment values. Under a comprehensive budgeting system, it also includes such services as laundering, dry cleaning, repairing and reconditioning. The purpose of this article is to illustrate the part these services may play in effecting economy.

### Woolen goods

The only satisfactory method of cleaning woolen goods is dry cleaning. Over-ambitious laundries will occasionally claim that they can wash woolen goods, but without going into the chemistry of perspiration, lime, mud, grass stains, blood stains, etc., it is safe to say they cannot do this job satisfactorily. One experience of having to replace thirty or forty shrunken jerseys will be a never-forgotten lesson to an inexperienced equipment man.

Side-line coats are generally not wool. Most of them are treated with a water-proofing material which comes off in the ordinary dry cleaning methods. Obviously such coats will best be laundered. They are mentioned here because they are often thought of as woolen goods.

The reconditioning of woolen goods is somewhat more complicated than that of cotton. Minor repairs to woolen materials can often be made by the dry cleaning company. For extensive repairs, it seems advisable to send all woollens to reconditioners specializing in this work.

Woolen equipment put away for the summer should be cleaned and then tightly sealed in a trunk, closet or locker containing a moth-killing chemical. Gummed tape should be used to seal every crack and opening, however slight. Killing chemicals recommended by the Department of Agriculture are naphthalene, paradichlorobenzene, and gum camphor. One pound of one of these chemicals spread in folds of tissue paper through the layers of garments will protect a trunk full of equip-

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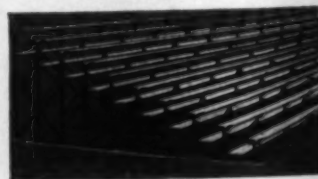
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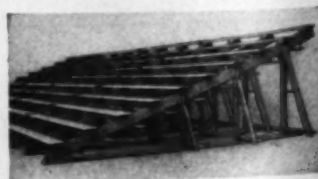
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ment. Three or four pounds sprinkled on shelves and floor will protect a whole closetful if the door is sealed tight.

### Cotton

All cotton equipment should be laundered as often as necessary. Obtaining proper laundering arrangements is not as simple as it may seem. There are laundries and laundries.

If the school cannot afford outside laundering service, it may be necessary to give each player the responsibility of cleaning his own equipment. Where washing is done by the players, occasional inspections should be made to see that the equipment is cleaned frequently.

If the player is expected to wash his own cottons, he should be given specific instructions on the process. Before putting the garment into the water, it is first necessary to repair all rips. After the cottons have been mended, they may be dropped into luke warm water which should have a temperature of about 90 degrees F. If washed by hand, they should not be rubbed too vigorously. The cottons should be rinsed in water of the same temperature and then twice more in cooler water, but not cold.

### Leather goods

The proper cleaning methods used in conjunction with leather goods will result in an appreciable increase in the life thereof. The necessity for cleaning leather goods arises from contact with mud, perspiration and water. While clean equipment is doubtless a virtue in itself, leather goods should be cleaned for a more utilitarian purpose. Water in any form rots leather; and, unless it is removed promptly, it depreciates leather goods far faster than ordinary wear.

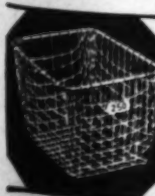
The players should be instructed to remove as much mud from their equipment as possible before re-



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Columbia Coach  
JOE LAPCHICK  
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CLAIR F. BEE, Director

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"Football for the Fan" . . . a series of six 16 MM Sound-on-Film reels — smashing action films featuring the nation's leading coaches and players vividly demonstrating important phases of the game. Pictures that should be part of the equipment of every squad—a real help to both coaches and players.



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for athletic and all other school uses.

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NAME \_\_\_\_\_ POSITION \_\_\_\_\_

(Principal, coach, athletic director, physical director)

SCHOOL \_\_\_\_\_ ENROLLMENT \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

No coupon honored unless position is stated

turning it to the equipment room. Brushes, towels and small sticks may be supplied by the manager for the purpose.

At the close of each season, all shoes should be carefully examined for need of repair. Specifications of work to be done should be carefully stated when asking for bids to do this work. These should include: (1) Grade of leather to be used. (2) Type of stitching. (3) Weight of thread. (4) Type of cleats. (5) Type of sole. (6) Amount of work. Shoes in good condition should be greased, cleat holes or stems oiled, new laces put on and stored away according to sizes.

During the playing season, each boy may be given, either orally or on a mimeographed sheet, instructions regarding the care of shoes. These should include: (1) Weekly greasing of the shoes. (2) Immediate report on tears and breaks. (3) Oil soles on wet days. (4) Dry shoes slowly away from excessive heat. (5) Keep cleats even by changing them around. Daily inspection of football shoes by student managers will materially lengthen the life of this equipment and do much towards avoiding the necessity for repairs.

Helmets, next to shoes, are subjected to more wear than other leather items. After a game, they should merely be buffed clean. Because of the shellac or painted finish on helmets, no leather preservatives should be used on them.

Felt padding in hip pads and shoulder pads can be cleaned by your local laundry or by the student managers. A good grade of soap and water applied carefully to the padding only is very effective. Reconditioning is decidedly worthwhile with hip pads, shoulder pads and helmets.

Years may be added to the life of balls by taking care never to inflate them above factory specifications. Excessive inflation causes too much strain on the stitching and the ball soon loses its shape. A pressure gauge is a good investment.

### ULTRAVIOLET QUARTZ LAMPS

(help keep athletes in top condition)  
Ultraviolet sunbaths are a stimulant to athletes and should be included in the daily program of physical training.

Models to meet all requirements.

**HANOVIA CHEM. & MFG. CO.**  
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Football Tickets Season Books  
Of Every Description





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 National Federation Approved  
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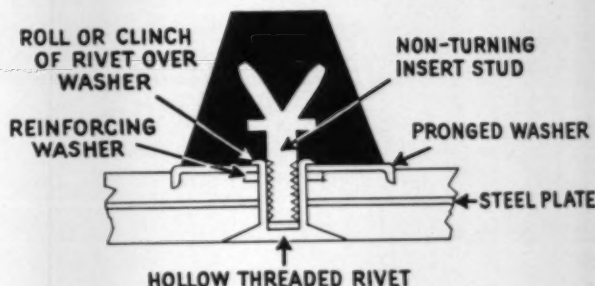
EV VOLLEYBALL ..... \$6.00



STYLE O ..... \$6.00  
 STYLE OX ..... 6.00



STYLE OX ..... \$5.00  
 ..... 5.00



## 1939 IMPORTANT 1939 CLEAT CHANGE

The Rules Committee have made it mandatory that cleats be  $\frac{1}{2}$  inch on the tread end and that they be conical in shape. The Rules Committee also have recommended that the cleats be of soft rubber and that they be "male" in type, that is the bolt in the cleat instead of projecting from the shoe. Our No. 1 Cleat since 1922 has been conical in shape, has been made of pliable rubber and has been  $\frac{1}{2}$  inch on the end.

In 1922 we applied for a patent to cover our construction on "female" cleats. In 1923 we applied for a patent covering "male" cleats. This construction as far as the sole of the shoe is concerned, we have used for the past twelve years in our Track shoes. We have always felt that this was a sounder construction than the "female" type of anchorage which we have been using in our Football shoes. In short we have felt that our track construction was sounder mechanically than our football construction.

We have wanted to change to this type of construction for a number of years, but since we were not having trouble with Riddell shoes when Riddell cleats were used on them, we could not see our way clear to go through the trouble of making the change. Now since the Rules Committee have recommended this change, we welcome it as a step forward in improving our Football shoes.

## 1939 CLEAT PRICES 1939

MALE No. 1 or 2 (per set of 14) ..... 30c

FEMALE Nos. 1 to 12 (per set of 14) ..... 30c



STYLE 89 SOFT TOE GAME  
 SHOE ..... \$10.00



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STYLE R ..... \$8.65  
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STYLE P ..... \$8.00  
 STYLE PX ..... 8.00



STYLE 77 ..... \$7.00  
 STYLE 77X SOFT TOE ..... 7.00

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Our System of quick and efficient service — our skilled workmanship—our methods for meeting the ever-changing problems of the world of Athletic Uniforms are the Standards which others, who followed our lead, have tried to measure up to.

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You Athletic Men who know so well that specialization leads to perfection can well appreciate why the IVORY SYSTEM is at the top, because for many years the IVORY SYSTEM has been Reconditioning Athletic Equipment to the exclusion of everything else. That is why your equipment is so safe in our care.

